Summary Project Name: WAG 3 OUT-14 RUFS Afternative 5- Contingent Snake River Plain Aquifer Pump and Treat Project Location: INTE-Tank Farm Project Number: 2966-M-5	Summary Report			
ESTIMATE ELEMENT Total Estimated Cost (TEC)	Estimate Subtotal \$9,059,815	Escalation 0.00% \$0	Contingency 27.93% \$2,530,773	TOTAL \$11,590,588
Total Cost (Rounded to the nearest \$ 10000)	\$9,059,815	%00.0 %00.0	\$2,530,773	\$11,590,588 \$11,590,000
	Remarks			
Type of Estimate: Project Support Estimator: J. Folker, 6-0322 Checked By: Approved By:				
04/22/2006 18:48:47 Estin	Estimating Services Department	ų.	ā.	Page No. 1

Project Summary Report

Client: L. Cahn, 6-3080
Prepared By: J. Folker, 6-0322
Estimate Type: Project Support

Project Name: WAG 3
OU 3-14 RUFS Afternative 5- Contingent Snake River Plain Aquifer Pump and Treat
Project Location: INTEC Tank Farm
Estimate Number: 2966-M-5

Group

Level

ţ	,						
	<u>Description</u> Capital Costs	Estimate Subtotal \$7,982,665	Escalation \$0	Contingency \$2,369,200	Contingency % 29.68%	TOTAL \$10,351,865	
	-Construction Activities	\$6,708,122	0\$	\$2,369,200	35.32%	\$9,077,322	
		\$482,116	0\$	\$190,095	38.43%	\$672,214	
	Submittals/Implementation Plans	\$482,116	\$0	\$190,098	39.43%	\$672,214	
	Operational Plans	\$149,660	0\$	\$59,011	39.43%	\$208,671	
		\$41,228	0\$	\$16,256	39.43%	\$57,484	
		\$41,228	0 \$	\$16,258	39.43%	\$57,484	
	Final Inspection Report	\$250,000	\$0	\$98,575	39.43%	\$348,575	
	Site Security Personnel	0\$	0\$	0\$	40.00%	0\$	
		2.	3	S	0.00%	<u>\$</u>	
	—Remediation	\$5,226,006	S	\$2,179,102	35.00%	\$8,405,108	
	Groundwater Extraction or Containment	\$6,226,006	\$0	\$2,179,102	35.00%	\$8,405,108	
	SRPA Groundwater Contingent Pump and Treat	\$6,226,006	\$0	\$2,179,102	35.00%	\$8,405,108	
	SRPA Extraction Weil	\$979,200	0\$	\$342,720	35.00%	\$1,321,920	
	Outside Piping	\$1,025,370	O\$	\$358,879	35.00%	\$1,384,249	
	Containment Building	\$2,783,025	9	\$974,059	35.00%	\$3,757,084	
	Treatment Plant	\$1,312,038	9	\$459,213	35.00%	\$1,771,251	
	Evaporation Pond	\$126,373	0	\$44,231	35.00%	\$170,604	
	Professional/Technical Services (Capital)	\$1,274,543	0\$	\$	0.00%	\$1,274,543	
	Project Management (Capital)	\$335,406	\$	\$	0.00%	\$336,406	
	Remedial Design/Remedial Action Work Plan	\$536,650	\$	3	0.00%	\$536,850	
	Construction Management (Capital)	\$402,487	\$	0 \$	0.00%	\$402,487	
	Operational and Maintenance (O&M) Costs	\$1,010,088	0\$	\$151,513	15.00%	\$1,161,601	
	O&M Activities	\$859,303	o \$	\$128,896	15.00%	\$988,199	

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Page No.

Project Summary Report

Client: L. Cahn, 6-3080
Prepared By: J. Folker, 6-0322
Estimate Type: Project Support

rruject Summit WAG 3 ;
OU 3-14 RIFS Alternative 5- Contingent Sneke River Plain Aquifer Pump and Treat Project Location: INTEC Tank Farm
Estimate Number: 2965.M-5

Level

TOTAL \$943,936 \$10,215 \$146,889 \$16,298 \$3,418 \$2,665 \$10,215 \$77,122 \$4,088 **2**,088 \$51,839 \$51,839 \$44,284 \$157,104 \$21,194 Contingency % 16.00% 15.00% 15.00% 15.00% 15.00% 15.00% 15.00% 15.00% 15.00% 15.00% 16.00% 15.00% 15.00% 15.00% 15.00% \$6,762 \$20,492 \$10,059 \$6,762 Contingency \$123,122 \$1,332 \$19,159 \$2,126 3 3 \$1,332 \$533 \$633 Escalation \$0 20 2 * 2 2 2 2 2 2 **₽** \$38,490 \$8,882 \$127,730 \$2,972 \$2,318 \$6,882 \$67,062 \$3,555 \$3,565 \$14,172 \$45,077 \$45,077 Estimate Subtotal \$820,813 \$136,612 -- Professional/Technical Services (Períodic) ---Site Information Database (CFLUP) (Annual) --Construction/O&M Activities (Periodic) ---- Annual Institutional Control Inspection Description
—Extraction, Containment, or Treatment
Systems --Survelliance and Monitoring (S&M) --Update Institutional Controls Plan (Periodic) -Project Management (O&M) (Annual) -Project Management (S&M) (Annual) ----Monitoring, Sampling, Testing, and Analysis (S&M) --- Project Management (IC) (Annual) -Remedy Failure or Replacement -Institutional Controls (IC) -Five Year Reviews Periodic Costs Group

\$11,590,588	
27.93%	
\$2,530,773	
0\$	
\$9,059,815	
Total OU 3-14 FS ALTERNATIVE 5-CONTINGENT SRPA PUMP AND TREAT FOR CLEANUP	

Memo:

TOTAL L. Cahn, 6-3080 J. Folker, 6-0322 Client: L. Cahn, 6-3080
Prepared By: J. Folker, 6-0322
Estimate Type: Project Support Other Operational plans include TPR's, JSA's, Training Plans, Operation and Lay Out Plans, RAD Monitoring and Control Plans, IH Exposure and Sampling Plans, Well Abondonment Plans, Handling/Transport/Disposel Plans, Site Security Plans, and Quality Control Plans. Material Subcontractor Equipment Resource Labor Project Name: WAG 3

OU 3-14 RUFS Alternative 5- Contingent Snake River Plain Aquifar Pump and Treet
Project Location: WTEC Tank Farm
Estimate Number: 2966-M-5 휟 à Contractor Code Description Operational Plans

Operational & Layout plan (cost per year)

1.00 YR

1.00 Memo

37573 \$37,573

6530 \$6,530 Мето

5657 \$5,557 \$50,000 \$50,000 \$149,660 \$0 \$149,660 \$208,671 \$59,011 \$60 \$5.557 0 \$0 \$5.557 \$0 \$0 \$1.00 \$1.00 \$2.557 \$0 \$0 \$1.00 ۵ **ي** ° 0 S 23 23 88 믔 \$50,000 \$50,000 \$149,660 \$0 \$0 \$0 \$59,011 \$208,671 0 0 ۰ ۾ 8 8 8 ខ្លួន្ត 2 o 0 ိမ္အ 222 8 잃었 Memo: The Industrial hygens exposure and sampling plan will be a annually produced document that will utilize pre-existing IH procedures. (cost from previous ISG estimate) ۰ **۵** ន ۵ ۵ 2000 88 0 o က္ခ മ 8 8 U.C. per LS U.C. per LS 0.00% ₹ ₹ -- Total Operational Plans Quality Control Plan Subtotal Estimate Training Plan Contingency Overheads Sales Tax Escalation Subtotal

Develop MSA Plan

đ The MSA plan will be annually produced document. The cost associated with this plan includes generation of the plan, project review of the plan, document finitization, and generation a checklist. (cost from previous ISG estimate). Мето:

٠<u>٢</u> o 0 0 0 മ 8 U.C. per LS MSA plan

41228 \$41,228

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41228 \$41,228

Material Costs where applicable include idaho State Sales Tax

Page No.

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Мето:

TOTAL The MSA plan will be a annually produced document. The cost associated with this plan includes generation of the plan, project review of the plan, document finalization, and generation of Client: L. Cehn, 6-3080
Prepared By: J. Folker, 6-0322
Estimate Type: Project Support Other Material Subcontractor Equipment Resource Labor UE I AIL ITER
Project Name: WAG 3
OU 3-14 RUFS Atternative 5- Contingent Snake River Plain Aquifer Pump and Treat
Project Location: IMTEC Tank Farm
Estimate Number: 2966-M-5 분 MON ě Code Description Develop MSA Plan

a checkist (cost from previous ISG astimate).	s (SG estimate).						
Sublotal Sales Tax	7000 0	000	0,00	888	\$41,228 \$0	S & S	\$41,228 \$0
Overheads	%,00:0	9	3		3		\$41,228
Scalation		S	0.5	S	S	0 \$	0\$
Cantingency		S.	\$0	DS.	\$16,256	0,4	902'91\$
Total Develop MSA Plan	0	\$	2	\$	\$67,484	3	\$57,464

s	
Imp. Pu	
PO A	
Develop ORR POA & Imp. Plan	
Devel	

The ORR Plan Of Action (POA) and the implementation plan's combined cost is assumed to equal the the MSA plan cost.

ORR POA & imp plan	CW	U.C. per LS	1.00 LS	0	° 0\$	° 0 \$	° 0	41228 \$41 ,228	° 0 5	41228 \$41,228
Subtotal Sales Tax Overheads		%00°0		:	0.000	0,000	200	\$41,228 \$0 \$0	0,0,0,s	\$41,228 \$0 \$0
Subtotal Estimate Escalation Contingency					0 \$	0\$	\$0 80 80	\$0 \$16,256	0\$ \$0	\$41,228 \$0 \$16,256
Total Develop ORR POA & Imp. Plan	, Imp. Plan			0	0\$	0\$	0\$	\$67,484	8	\$57,484

Final Inspection Report

Cost allowance is based on the PERA for WAG 7 SDA (INEEL/EXT-02-01258) Rev-0. Memo:

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0	0
0	0
0	%
250000	\$250,000
	o
	1.00 LS
UC. per LS	
IMO	FINAL INSPECTION REPORT

250000 \$250,000

Material Costs where applicable include tdaho State Sales Tax Page No. 2

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Estimating Services Department

Memo:

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Project Name: WAG3 OU 3-14 RUFS Afte Project Location: INTEC Tank Farm Estimate Number: 2966-M-5	VAG 3 OU 3-14 RUFS Atternative 5- Contingent Snake River Plain Aquifor Pump and Treat INTEC Tank Farm	ingent Snake	River Plain Aq	uifer Pump	ump and Treat	Š		Cie Est	Client: L. Cah Prepared By: J. Folk Estimate Type: Projec	L. Cahn, 6-3080 J. Folker, 8-0322 Project Support	
Code Description	Contractor	4	MON -	된	Resource La	Labor E	Equipment	Material	Subcontractor	Other	TOTAL
Final inspection Report Memo: Cost allowance is	tion Report Cost allowance is based on the PERA for WAG 7 S	IG 7 SDA (INEE	DA (INEELEXT-03-01258) Rev-0.	Rev-0.							
<u> </u>					*	\$250,000	0\$	Š		0\$	\$250,000
Sales Tax Overheads		0.00%				05 G	0 .5	\$0 \$0	0 0	9 9	8 8
Subtotal Estimate Escalation Contingency		:				\$0 575,86\$	0\$	0\$ 0\$	0\$	0\$ 0\$	\$260,000 \$0 \$98,575
-Total Final Inspection Report	ort			0	* 	\$348,576	95	3	S\$	8	\$348,575
Site Security Personnel Memo: Assume ML will i	Personne! Assume IVIL will maintain security personnel required for construction activities.	required for 60	nstruction activ	ilies.							
U96J3 SECURITY POLICE OFFICER II (SPO II)	BEA	U.C. per Ea	2.00 Ea	0	096.33	°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°	0 8	0 \$	0 \$ 0	0.01 \$0	8.0
Subtotal Sales Tax Overheads		%00.0	:			0\$ Q Q	0\$ \$0 \$0	<u> </u>	0\$	0,000	08
Subtotal Estimate Escalation Contingency						0\$ 80 80	\$0 \$0	0 \$	\$0 \$0 \$0	0 \$	3 00 00
—Total Site Security Personnel	3			0		\$	0\$	a	9	33.	:
Monitoring, Sampling, Testing, and Analysis (Capital) Monitoring, Sampling, Testing and Analysis Memo: These costs will be paid for by INTEC RAL.	L and Analysis (Capkal) sing and Analysis sfor by INTEC RAL.	UC perLS	1.00 LS	o		0\$	o o	· · ·	0\$	60°	\$00 \$0

Estimating Services Department

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Material Costs where applicable include Idaho State Sales Tax Page No. 3

828 **3.** 8. 8. 8 TOTAL 2 2 2 88 8 Client: L. Cahn, 6-3080
Prepared By: J. Folker, 6-0322
Estimate Type: Project Support She Material Subcontractor 8 2222 \$ 00 S 888 88 222 S S S Equipment S & S 88 S Resource Labor Project Name: WAG3
OU 3-14 RUFS Alternative 5- Contingent Snake River Plain Aquifer Pump and Treat
Project Location: WIEC Tank Farm
Estimate Number: 2866-M-5 Ë MON ð 0.00% Monttoring, Sampling, Teging, and Analysis (Capital) -- Total Monitoring, Sampling, Testing, and Analysis (Capital) Contractor Code Description Subtotal Estimate Contingency Overheads Sales Tax Escalation Subtotal

SRPA Extraction Well

Costs Include General Conditions Memo:

408 \$979,200

		0\$	9	S	\$979,200	Ş	\$979,200
Coleo Tev		05	S	0\$	9	9	S
Overheads	%00:0	0\$	0\$	0\$	\$0	O\$	0\$
							\$979,200
		\$0	2	\$0	20	0	S
Continuency		OS S	0	8	\$342,720	9	\$342,720
				۱	900 700 74	5	*4 124 020
-Total SRPA Extraction Well	•	2	3	3	076,136,14	\$	776'176'14

Outside Piping

From FS-314 Pump and Treatment Yard Plan, scaled double cased C.S. (see page 43) piping. Costs include Ganeral Conditions Мето:

80
98 7 \$366,775 1 Data.
o \$0 emediation Cos
0 \$0 s Environmental R
o \$0 ists from RS Mean
0 ment Yard and Piping Plan. Unit α
4,135.00 LF 4 Pump and Trea!
U.C. per LF Length scaled from FS 3-1.
ICP SRPA Extraction Well Discharge Piping Memo: 4/6" Double CS pipe, fittings, sleepers.

88.7 \$366,775

Material Costs where applicable include idaho State Sales Tax Page No.

Estimating Services Department

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Memo:

33 41 \$124,619 \$1,025,370 \$0 88.7 \$197,003 33.47 \$1,025,370 \$358,879 \$1,384,249 TOTAL ۵° ° 0\$ ۵ ° 999 2 Q 3 Client: L. Cahn, 6-3080
Prepared By: J. Folker, 8-0322
Estimate Type: Project Support Other Material Subcontractor 33.41 \$124,619 33.41 \$1,025,370 \$0 \$0 \$358,879 \$1,384,249 Injection Well Piping \$0 \$1.3 Memo: 4/6" Double CS pipe, fittings, sleepers. Length scaled from FS 3-14 Pump and Treetment Yard and Piping Plan. Unit costs from RS Means Environmental Remediation Cost Data. ° 05 ۰ ۵ ° 0 222 22 2 ° 05 ° 0 999 ್ಣ ಜ್ಞ 8 Equipment From FS-314 Pump and Treatment Yard Plan, scaled double cased C.S. (see page 43) piping. Costs include General Conditions 0 0 ٥° S 2 2 2 2 2 Resource Labor DETAIL ITE:

OU 3-14 RIFS Alternative 5- Contingent Snake River Plain Aquifer Pump and Treat
Project Location: INTEC Tenk Farm
Estimate Number: 2966-14-5 뜊 0 MON 5 10,086.00 à U.C. per LF U.C. per LF Pipe Insulation Memo: Ref: Estimate file # 6271, item 1.3.15.1.5, for 6" pipe insulation. 0.00% Contractor ō <u>ق</u> -Total Outside Piping Code Description Subtotal Estimate Escalation **Outside Plping** Contingency Sales Tax Overheads Subtotal

Containment Building

217 \$2,783,025 Building square foot costs are based on replacement value for a pre-engineered materi building at the BIL. See estimate file \$ 8773-8 for subcontract unit cost. Construction subcontract for building includes; general conditions, sitework, concrete, masonry, finishes, special construction, mechanical (incl HVAC wHEPA Ritration), and electrical. See FS for bidg footprint with outside dimensions. ° 2 217 \$2,783,025 ° 0 ° 0 Memo:

٠ **۵** 0 Ŗ 12,825.00 U.C. per SF ICP Pre-Engineered Metal Building Memo: 135'x 95'≈ 12825 SF Material Costs where applicable include Idaho State Sales Tax Ś Page No.

Estimating Services Department

18.47.44 04/22/2006

Code Description

TOTAL Client: L. Cahn, 6-3080
Prepared By: J. Folker, 6-0322
Estimate Type: Project Support Other Material Subcontractor Equipment OU 3-14 RUFS Alternative 5- Contingent Snake River Plain Aquifer Pump and Trest Evimate Number: 2966-14-5 Contractor

Resource Labor Ę NO No ğ

Containment Building

Building square foot costs are based on replacement value for a pre-engineered metal building at the INL. See astimate file # 8773-B for subcontract unit cost. Construction subcontract for building includes: general conditions, affected, concrete, masonry, finishes, special construction, mechanical (incl HVAC whEPA filtration), and electrical. See FS for bidg footprint with outside dimensions. Memo:

AND COMPAND OF THE PROPERTY.								
Control			9	0\$	%	\$2,783,025	0\$	\$2,783,025
Sales Tax			<u>s</u>	0\$	9	0\$	0\$	\$
Overheads	0.00%		\$0	20	\$0	\$0	0\$	0\$
Corporate Regiments								\$2,783,025
Pacalation			9	0\$	0 \$	0 \$	\$0	0\$
Contingency			\$0	\$0	0\$	\$974,059	\$0	\$874,059
Total Containment Building		0	0\$	9\$	3	\$3,757,084	2	\$3,767,084
•								

Treatment Plant

Costs include General Conditions Мето:

937170 \$937,170 Process Equipment, Piping, Valves
Process Equipment, Piping, Valves
Process Equipment, Piping, Valves
Process Equipment, as specified in Table 4.2, FS: (2) cation columns w/resin; (2) anion columns w/resin; (1) salt tank; (1) salt conveyor; (1) phosphate tank; (2) fitters; (1) contact vessel; (4) surge lanks. See also Figure
A 4, Process Plow Diagram, FS, Figure 4.5, P&I. Diagram, FS, Costs from: Richardsons Process Plant Construction; Volume 4, Hot Process Water Softener Systems, (for 550 gpm) Account # 100-374, escalated to

\$1,312,038 \$0 0.4 \$374,868 ۰ ۵ S S S 0.4 \$374,868 \$1,312,038 \$0 \$0 ္ ဒ္အ S S S ့ ဇ္တ 222 ۰ **چ** 222 ٥ 937,170.00 U.C. per\$ Electrical, I&C Memo: 40% of process equipment costs ರಿ Sales Tax Subtotal

\$1,312,038 \$459,213 \$1,771,251 S S 3 \$0 \$469,213 \$1,771,251 **⇔** ⇔ 8 0 0¢ 2 200 8 o 0.00% -Total Treetment Plant Subtotal Estimete Contingency Overheads Escalation

Material Costs where applicable include Idaho State Sales Tax

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0.05 \$335,406 126373 \$126,373 0.08 \$536,650 \$44,231 \$126,373 \$126,373 \$335,406 \$335,406 TOTAL \$170,604 \$336,406 Evaporation Pond 0 0 0 0 0 0 126373 0 0 \$0 \$0 \$0 \$126,373 0 0 \$0 \$0 \$126,373 \$0 \$0 \$0 \$0 \$126,373 \$0 \$0 \$0 \$126,373 \$0 \$0 \$0 \$126,373 \$0 \$0 \$0 \$126,373 \$0 \$0 \$126,373 \$0 \$0 \$126,373 \$0 \$0 \$126,373 \$0 \$0 \$17215,000 SF.215,000 SF.215 9 0\$ 222 ಜ್ಞ ಜ್ಞ 유 3 999 9 9 Client: L. Cahn, 6-3080
Prepared By: J. Folker, 6-0322
Estimate Type: Project Support Other ° 0 Material Subcontractor ၀ ဋ္ဌ \$126,373 \$0 \$0 3 \$0 \$44,231 9 9 9 8 8 8 \$170,604 888 2 ۰ و 888 ន ٥ g S S S S ° 0 S S S 2 G 8 2000 않않 3 ° 0 Equipment \$335,406 \$0 \$0 Q Q **\$** 0.05 \$335,406 900 \$536,650 800 \$335,406 Resource Labor Project Name: WAG 3
OU 3.14 RUFS Alternative 5- Contingent Snake River Plain Aquifer Pump and Treat Project Location: INTEC Tank Farm
Estimate Number: 2966-M-5 0 0 뿔 RA Work Plan cost estimated at 8% of construction 6,708,122.00 \$\$

Memo: Estimate assumes equipment design will be done by equipment manufacturers, for the track-hoe. 0 0 MON U.C. per \$\$ 6,708,122.00 \$\$ ð U.C. per \$\$ 0.00% 0.00% Costs include General Conditions Remedial Design/Remedial Action Work Plan Contractor CWI PM cost estimated at 5% of construction -Total Project Management (Capital) Project Management (Capital) -Total Evaporation Pond Code Description Subtotal Estimate Subtotal Estimate Evaporation Pond Contingency Contingency Overheads Overheads Escalation Sales Tax Sales Tax Subtotal Subtotal Memo:

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Estimating Services Department

Material Costs where applicable include Idaho State Sales Tax Page No.

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\$535,650 \$0 \$0 \$636,669 \$0 \$0 \$536,650 TOTAL 0 0 0 0 0 0 0 0 **8** 8 2 Client: L. Cahn, 6-3080
Prepared By: J. Folker, 6-0322
Estimate Type: Project Support Other Material Subcontractor 2 S S S **88** 222 ន្ទ ន 2 S S S \$ ₽ Equipment \$536,650 \$0 \$0 **8** 8 \$636,660 Resource Labor Project Name: WAG 3 | Contingent Snake River Plain Aquifer Pump and Treet Project Location: MTEC Tank Farm 윈 0 **≅** On ŧ 0.00% -- Total Remedial Design/Remedial Action Work Plan Remedial Design/Remedial Action Work Plan Confractor Code Description Subtotal Estimate Escalation Contingency

Subtotal Sales Tax Overheads

Construction Management (Capital)								
CWI CM cost estimated at 6% of construction	U.C. per \$\$ 6,708,122.00 \$\$	o	0.06 \$402,487	0 \$	° 0\$	° 05	0\$	8402,487
Subtotal Sales Tax Overheads	0.00%		\$402,487 \$0 \$0	0\$	05 80 80 80 80 80 80 80 80 80 80 80 80 80	0\$ 0\$ 0\$	0\$ 0\$ \$	\$402,487 \$0 \$0
Subtotal Estimata Escalation Contingency			0\$	0\$ \$	\$0 \$0	\$ \$ \$0	0 0 S	\$402,487 \$0 \$0
Total Construction Management (Capital)		0	\$402,487	2	8	9	3	\$402,487

CM CM CM P&T Maintenance @ 2% of P&T Construction Costs Manno: Vestu costs This will construction the incident of the costs of the	U.C. per \$ 5,123,618.00 \$	0	° 0\$	° 09	° 09	° 08	0.02 \$102,472	0.02 \$102,472
CWI "Operations" Memo: Assume 2 people, 24 x 7 operation.	U.C. per LS 1.00 LS	o	° •	° 0\$	o o s	° 99	0.00 \$0	0.07 \$0

Material Costs where applicable include Idaho State Sales Tax Page No. 8 Estimating Services Department

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110489.6 \$27,622 319389.6 \$638,779 2000 \$20,000 0.1 \$31,939 \$820,813 \$0 \$0 \$123,122 \$820,813 \$843,936 TOTAL ° 0 \$122,472 \$0 \$0 0\$ 20000 9 \$0 \$18,371 \$140,843 Client: L. Cehn, 6-3080
Prepared By: J. Folker, 6-0322
Estimate Type: Project Support Other Material Subcontractor ° 0\$ ° 0 ° 0 ۰ ۵ 8 \$ \$ \$ 200 ° 2 ಿಜ್ಞ ° 2 ၀ ဋ္ဌ 8 8 8 2 S S ° 0\$ ္ င္တ ° 0\$ 0 \$0 8 00 00 00 00 00 00 88 Equipment \$698,341 \$0 \$0 319389.6 \$638,779 110489.6 \$27,622 ° 0\$ 0.1 **\$**31,939 \$0 \$104,751 \$803,092 Labor Resource Project Name: WAG 3

OU 3-14 RUFS Atternative 5- Contingent Snake River Plain Aquifer Pump and Treat

Project Location: INTEC Tank Farm

Estimate Number: 2966-M-5 \$36.46 U52 \$53.12 Z08 8760 17,520 2080 520 0 0 뿔 MON 319,390.00 \$ Nemo: Total labor = \$538,779/2 = \$319,390 (back shift), 10% shift differential for back shift) 뿝 Ħ ቯ 0.25 2.00 8 ð U.C. per FTE U.C. per FTE U.C. perLoi U.C. per \$ 0.00% Extraction, Containment, or Treatment Systems CWI Allowance for Consumables and Supplies Contractor Š Š CWI SUPERVISOR, OPERATIONS UTILITY OPERATOR Code Description Subtotal Estimate Contingency Subtotal Sales Tax Overheads

Project Management (O&M) (Annual)

Responsible for managing baseline schedule and budget, LCB mods, changes and updates, reporting, resource loading, etc. 10 hrs/month. Based on current/proposed crew makeup and determined duration periods. Memo:

18,040

-Total Extraction, Containment, or Treatment Systems

740.2 \$38,490
o g
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o 0\$
740.2 \$38,490
10 \$74.02 520 E28
52.00 wks
U.C. per wks
CWI PROJECT MANAGEMENT
E28 PROJE

Material Costs where applicable include Idaho State Sales Tax Page No.

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Estimating Services Department

WAG 3 Project Name:

Project Location:

Estimate Number: 2966-M-5

Project Management (O&M) (Annual)

Code Description

TOTAL L. Cahn, 6-3080 J. Folker, 6-0322 Other Estimate Type: Project Support Material Subcontractor Prepared By: Client: Equipment Resource Labor OU 3-14 RUFS Alternative 5- Contingent Snake River Pisin Aquifer Pump and Trest INTEC Tank Farm Ę **™** ¥ Contractor

\$0 \$5,774 \$38,490 \$44,284 Responsible for managing baseline schedule and budget, LCB mode, changes and updates, reporting, resource loading, etc. 10 hrs/month. Based on current/proposed crew makeup and determined duration periods. 200 **88** 3 2 S & S \$ Q \$ **\$** \$ 8 88 ន 8 8 8 8 88 \$38,490 \$0 \$0 \$0 \$5,774 **74**,784 620 0.00% -- Total Project Management (O&M) (Annual) Subtotal Estimate Contingency Overheads Escalation Sales Tax Subtotal Memo:

Project Management (S&M) (Annual)

Responsible for managing baseline schedule and budget, LCB mods, changes and updates, reporting, resource loading, etc. Based on current/proposed crew makeup and determined duration periods. Hemo:

E28 PROJECT MANAGEMENT	U.C. per months 12.00 months	10 \$74.02 120 E28	740.2 \$8,892	° 0g	° 04	° 03	° °	740.2 \$8,882
Subtotal Sales Tax Overheads	0.00%		\$8,882 \$0 \$0	0\$ 80 80	000	\$0 \$0 \$0	0\$ \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$8,882 \$0
Subtotal Eathmate Escalation Contingency			\$0 \$1,332	0\$	\$0 \$0	0\$ 0\$	0 \$	\$8,882 \$0 \$1,332
-Total Project Management (S&M) (Annual)		120	\$10,215	8	3	0\$	3	\$10,215

Monitoring, Sampling, Testing, and Analysis (\$&M)

Includes radiation surveys and environmental monitoring for CPP-96. For groundwater monitoring, group 5, estimate #8530-DWP2-118 and WBS P-4.C1.04.01, Routine GW monitoring LCB estimates are used as basis. AWMR first 5 years (from 2007) then every 5 years till 2095. The long term groundwater monitoring requirements will be the same as Group 5 as apecified in the long term monitoring plan in terms of number of wells, frequency, number of constituents, etc. See L. S. Cahn email to J. Folker dated 08/12/2005. Мето:

Material Costs where applicable include Idaho State Sales Tax 5 Page No.

Estimating Services Department

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Client: *L. Cahn, 6-3080*Prepared By: *J. Folker, 6-0322*Estimate Type: *Project Support*

Project Name: WAG 3
OU 3-14 RUFS Alternative 5- Contingent Snake River Plain Aquifer Pump and Theat Project Location: INTEC Tank Farm
Estimate Number: 2966-M-5

Other TOTAL	\$0 \$00	50 \$1,896.4	0 1502 B \$0 \$1,503	\$0 \$001	0 31713 \$0 \$31,713	900,8 \$0 \$3,610	504 5.04 \$0	644 64 \$0 \$644	0 296.24 \$0 \$296	\$5,968 \$5,968	6 109.83 \$0 \$110	6 1000.8 \$0 \$1,001
Subcontractor	0 \$0 will not be required.	0 \$	° \$	0 \$	O 94	<i>o</i> ⇔	° 0	0 0 8	0 0	000	<i>0</i>	° 09
Material	50 \$0 monitoring program	o s	0 95	0 0 0 0 0 0	1453 \$1,453	1463 \$1,463	<i>°</i> \$\$	° 99	° 00	o \$	0 \$\$	o s
Equipment	50 \$0 RCRA groundwafer	0 0 5	° 0 \$	° 0\$		9 O	° °	0\$	0\$	os S	0 \$	0 \$
urce Labor	\$0 \$0 st closure permit, or F	1896.4 \$1,896	1602.8 \$1,603	0	30260 \$30,260	2146 B \$2,147	0 \$	\$644.04	296.24 \$296	5968 \$5,968	109.83 \$110	1000.8 \$1,001
Hrs Resource	0 i perched water. fore a RCRA cap, pov	40 \$47 41 40 X12	40 \$40.07 40 U-60	0	٥	40 \$53.67 40 \$15	0	12 \$15.67 12 \$15	8 \$37.03 8 T10	200 \$29.84 200 T15	3 \$36.67 3 U16	30 \$33.36 30 U76
Qty NOM	1.00 LS INTEC groundwater and perched water in the soil. Therefore a RCRA ca	1.00 ea	1.00 ca	1.00 LS	1.00 ea d to 2005.	NM60 1.00 LS ERM4100045.	1.00 LS ERM4100046.	1.00 ea	1.00 ea	1.00 ea	1.00 ea	1.00 ев
'	U.C. per LS will be approved for all IN k from the RCRA constitu	U.C. per ea	U.C. perea	U.C. per LS	U.C. per ee 30-DWP2-11B, escalate	U.C. per LS 3W monitoring LCB, ID E	U.C. per LS SW monitoring LCB, ID E	U.C. perea	U.C. perea	U.C. per ea	U.C. per ea	U.C. peres
cription Contractor	CWI U.C. per LS 1.00 LS 0 \$0 0 0 0 0 0 0 0 0 Solid Monitoring* A No Longer Contained in Determination will be approved for all INTEC groundwater and perched water. The tank farm tanks will be clean closed The RIBRA showed that there was no risk from the RCRA constituents in the soil. Therefore a RCRA cap, post closure permit, or RCRA groundwater monitoring program will not be required	CWI ENVIRONMENTAL RESTORATION	CWI RADIOLOGICAL CONTROL TECH	CWI Groundwater Monitoring*	CWI U.C. per ee Annual Well Monitoring, Including Report Memo: Based on Group 5 DWP estimate file # 8530-DWP2-11B, escalated to 2005.	CWI U.C. per LS NM60 Prepare TOS, Work Planning & Mobilization 1.00 LS Memo: Based on Group 5 actuals. See Routine GW monitoring LCB, ID ERM4100045.	CWI U.C. per LS "Collect samples" Memo: Based on Group 5 actuals. See Routine GW monitoring LCB, ID	CWI ANALYTICAL CHEMISTRY	CWI LABORATORY TECH	CWI ENVIRON/FIELD TECH	CWI	CWI CONSTRUCTION IRON WORKER (FORCE ACCT)
Code Description	*Soil Mc Memo: A No The ts The R	X12 ENVIRC	U-60 RADIOI	*Ground	Annual Memo: Basex	Prepare Memo: Based	*Collect Memo: Baser	S15 ANALYT	T10 LABORA	T15 ENVIRC	U16 FITTER	U76 CONSTI

Material Costs where applicable include idaho State Sales Tax Page No. 11

Estimating Services Department

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04/22/2006

			TOTAL	
			¥	
	n, 6-3080 er, 6-0322	t Support	Other	
	L. Folk	oe: Projec	Subcontractor	
,	Client: L. Cann, 6-3080 Prepared By: J. Folker, 6-0322	stimate Ty	Subco	
•	JE	ш	Materia	
			Equipment	
			ce <u>Labor</u>	
	and Treat		Resource	
	iffer Pump		H	
	Snake River Plain Aquifer Pump and Treat		NON	
	Snake Rive		À	
	ontingent :	ı		
	WAG 3 OU 3-14 RUFS Atternative 5- Contingent		<u>zo</u>	eis (S&M)
	RUFS Atten	ink Farm	Contractor	g. and Anah
	WAG3	Project Location: INTEC Tank Farm Estimate Number: 2966-M-5	otion	donitoring, Sampling, Testing, and Analysis (S&M)
	Project Name:	ct Location ate Numbe	Code Description	oring, Sam
	Proje	Proje Estim	Code	Mont

Memo:	no: Includes radiation surveys and environmental monitoring for CPP-96. For groundwater monitoring, group 5, estimate file # 8530-DWP2-11B and WBS P.A.C.1.04.01, Routine GW monitoring LCB estimates are used as basis. AWMR first 5 years (from 2007) then every 5 years till 2095. The long term groundwater monitoring plan in terms of number of wells, frequency, number of constituents, etc. See L. S. Cehn email to J. Folker dated 08/12/2005.	ital monitoring for Isst 5 years (from n terms of numbe	r CPP-96. 2007) the er of wells	For groundwater in every 5 years ti i, frequency, numi	monitoring, Il 2095. The ber of constit	oning for CPP-96. For groundwater montforing, group 5, estimate file # 8530-DWP2-11B and WBS P.A.C1.04.01, Roudine GW mo Is ffrom 2007) then every 5 years till 2095. The long term groundwater monitoring requirements will be the same as Group 5 as 31 number of wells, frequency, number of constituents, etc. See L. S. Cahn emalf to J. Folker dated 08/12/2005.	8530-DWP2-11B (monitoring requirent end of the second of	and WBS P.A.C1. ements will be thinker there	04.01, Routine GN e same es Group ROOS.	f monitoring 5 as	
84	CWI CONSTRUCTION LABORER (FORCE ACCT)	U.C. perea	9.	g Be	66 \$31.36 66 U84	2069.76 \$2,070	° 0¢	° <u>0</u>	000	08	2069 76 \$2,070
X12	CWI ENVIRONMENTAL RESTORATION	U.C. perea	1.00	9a 2	26 \$47.41 26 X12	1232.86 \$1,233	0 0\$	о ў	0 99	0 0 8	1232.66 \$1,233
Mem	CWI U.C. per LS NA Sample Analysis 1.00 I Memo: Based on Group 5 actuals. See Routine GW monitoring LCB, ID ERM4100047	U.C. per1.S oring LCB, ID ERM	NM80 1.00 LS 14100047.	180 S-	o	О	<i>o</i> &	0 \$	7227 <i>4</i> \$72,274	° 0 \$	72274 \$72,274
Mem	CWI U.C. per LS 1.00 I 1.00 U.C. per LS 1.00 U.C. per LS 1.00 U.C. per LS 1.00 U.C. per LS 1.00 L 1.00 U.C. per LS 1.00 L 1.00 L 1.00 U.C. per LS LSV Report*	U.C. per LS oring LCB, ID ERM	1.00 L	LS 6.	٥	о с	0\$	0 \$\$	0 0\$	\$0 \$0	0.0 \$0
A02	CWI DATA ENTRY	U.C. per ea	8.	8.8	40 \$19.98 40 A02	799.2 \$799	0 O#	° 0¢	0\$	° 0	799.2 \$799
N RPR	R RECORDS MANAGEMENT	U.C. per hrs	NRPR 9.00 hrs		0	° 9	o \$	38.38 \$345	° 0	0 9	38.38 \$345
A25	CWI OFFICE ADMINISTRATION/COORDINATION	U.C. per ea	1.00		3 \$25.58 3 A25	76.74 57.7	° 3	° 64	° ° °	0 \$	\$7.74 \$7.7
\$15	CWI ANALYTICAL CHEMISTRY	U.C. per ea	9.1	. E	35 \$53.67 35 \$15	1878.45 \$1,878	° 0°	° <u>9</u>	0 \$	° 0\$	1878.45 \$1,878

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Material Costs where applicable include Idaho State Sales Tax Page No. 12

Estimating Services Department

DETAIL THE Project Name: WAG3 ;
OU 3-14 RUFS Attermetive 5- Contingent Snake River Plain Aquifer Pump and Treet
Project Location: WIEC Tank Farm
Estimate Number: 2966-M-5

Client: L. Cehn, 6-3080
Prepared By: J. Folker, 6-0322
Estimate Type: Project Support

Code De Monitoring	Code Description Contractor Montoring, Sempling, Testing, and Anelysis (S&M) Memo: Includes radiation survays and environ LCB estimates are used as basis, AM specified in the long term monitoring p	mental monit MR first 5 year lan in terms c	Otty ng for CPP-96. (from 2007) th number of wealth	UOM L For groundw en every 5 yea s, frequency, 1	Hrs R Water moni hunder of	Resource Labor nitoring, group 5, estin 995. The long term grou of constituents, etc. Se	Labor 5, estimate em ground 1, efc. See L	Qty UOM Hrs Resource Labor Equipment Material Subcont Subcont Inches Subcont Subco	Material 18 and WBS I quirements wi Folker dated	Qty UOM Hrs Resource Labor Equipment Material Subcontractor Other bring for CPP-86. For groundwater monitoring, group 5, estimate file \$ 8530-DWP2-11B and WBS P.A.C1.04.01, Routine GW mo is from 2007) then every 5 years till 2005. The long term groundwater monitoring requirements will be the same as Group 5 as if number of wells, frequency, number of constituents, etc. See L. S. Cahn email to J. Folker dated 09/12/2005.	Other GW monitoring	TOTAL
S16 CHEN	CHEMICAL SCIENCES	CWI U.C. perea	1.00	83	8.8	\$65.07 \$16	2212.38 \$2,212	0 \$	° 9	0 \$	° 6	2212.38 \$2,212
Subtotal Sales Tax Overheads	, w	%00'0					\$52,194 \$0 \$0	0\$ 0\$ 0\$	\$3,261 \$0 \$0	\$72,274 \$0 \$0	0\$	\$127,730 \$0 \$0
Subtotal Est Escalation Contingency	Subtotal Estimate Escalation Contingency			i			\$0 \$7,829	0\$	\$0 \$489	\$0 \$10,841	\$0 \$0	\$127,730 \$0 \$19,159
Total Mc	onitoring, Sampling, Te	Total Monkoring, Sampling, Testing, and Analysis (S&M)		57.7			\$60,023	8	\$3,751	\$83,116	Q \$	\$146,889

Site Information Database (CFLUP) (Annual)

B-290

e INIL per year	° 0 5
ings and updates in the rate by R. Fitch. Once	9 9
he site listings ar trols, estimate by	° 9
v use. Meintein ti Institutional Com	о <u>о</u>
inrestricted residentla ee WBS P.4.C1.03.02,	2370.5 \$2,371
thich make the site unsuitable for unrestricted residential use. Maintain the afte listings and updates in the IML scorporation of QRB comments. See WBS P.4.C1.03.02, institutional Controls, estimate by R. Fitch. Once per ye	50 \$47.41 50 X12
smain which make t icles, incorporation	1.00 ea
effect as long as hazards remain which make the site unsuitable for unrestricted residential use. Maintain th Yous agreed to by the agencies. Incorporation of ORB comments. See WBS P.4.Ct.03.02, institutional Conf	U.C. per ea
institutional controls will remain in e CFLUP; update changes or forminati through 2086, 1 year costs.	CWI DNMENTAL RESTORATION
Memo:	X12 ENVIRO

2370.5 \$2,371

\$117

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58.69 \$117

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NRPG 2.00 hrs

U.C. per hrs

<u>₹</u>

NRPG WRITER/EDITOR

Project Name: WAG 3 ;
OU 3-14 RUFS Atternative 5- Contingent Snake River Plain Aquifor Pump and Treat
Estimate Number: 2966-M-5

Client: L. Cahn, 6-3080
Prepared By: J. Folker, 6-0322
Estimate Type: Project Support

Code Description	Contractor	Ato	MON		Resource	Labor	Equipment	Material	Subcontractor	Other	TOTAL
Site information Database (CFLUP) (Annual)	P) (Annuel)				;	;	;	;		;	
Memo: Institutional controls will rea CFLUP; update changes or: through 2095. 1 year costs.	Institutional controls will remain in effect as long as hazards remain which make the unsuitable for unrestricted residential use. Maintain the site listings and updates in the INL. CFLUP; update changes or tarminations agreed to by the agencies, incorporation of ORB comments. See WBS P.4.C1.03.02, institutional Controls, estimate by R. Fitch. Once per year through 2085. 1 year costs.	s hazards rems by the agencie	sin which make s. Incorporatio	the site un in of ORB a	suttable for u comments. Se	nrestricted re e WBS P.4.C	eidential use. Mai 1.03.02, institution	ntain the site. el Controls, e	listings and updates stimate by R. Fitch. (in the INL Once per year	
	CWI U.C. per ea				\$60.57	484.56	06	•	0 0	0 5	484 56
GEOLOGY		1.00	. ea		505	\$485	O.			O#	0.0449
Subtotal						\$2,855	0\$	\$117		80	\$2,972
Sales Tax Overheads	0.00%					, ,	S S	o	% % % %	8 8	S S
Subtotal Estimate Escalation Continuency					į	\$428	0\$ 8	\$ \$0	09	9 99	\$2,972 \$0 \$446
Total 1964 and the Control of the Co				٤		12.53	s	4434	03	s	\$3.418
Insti	on state of the st		PRODUCTION OF THE PRODUCTION O								
Memo: Annual inspection (v	Annual inspection (Assessment). One wish No. 1.4.01.01.02, ID # Exmissiven U.	C1.03.02, 10.	EKM36W010.								
X12 CWI ENVIRONMENTAL RESTORATION Memo: For assessment	CWI U.C. per ea	1.00	ea O	60 60	\$47.41 X12	379.28 \$379	° 9	•	0 0\$	° 0,	379.28 \$379
S05 GEOLOGY Memo: For assessment	CWI U.C. per ea	1.00	88 0	32 8	\$60.57 \$05	1938.24 \$1,938	0 \$	₩	0\$ 0\$	<i>0</i>	1938.24 \$1,938
Subtotal Sales Tax Overheads	%00.0					\$2,318 \$0 \$0	08 08 08 08		0\$ 0\$ 0\$ 0\$ 0\$	0\$ \$0 \$0	\$2,318 \$0 \$0
Subtotal Estimate Escalation Contingency						\$0 \$348	0\$ \$	***	0\$ 0\$ 0\$ 0\$	0\$ 0\$	\$2,318 \$0 \$348
Total Annual Institutional Control Inspection	rol Inspection			\$		\$2,685	3	•	0\$ 0\$	3	\$2,665

Material Costs where applicable include Idaho State Sales Tax Page No. 14

Estimating Services Department

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Project Name: WAG3 ;
OU 3-14 RIFS Atternative 5- Contingent Snake River Plain Aquifer Pump and Treat
Estimate Number: 2066-M-5

Client: L. Cahn, 6-3080
Prepared By: J. Folker, 6-0322
Estimate Type: Project Support

Code Description	Ontractor	Q	MON	된	Resource Labor	Labor	Equipment	Material	Subcontractor	Other	TOTAL
Project Management (IC) (Angual)	(IC) (Annual)										
Memo: Respons duration	Responsible for managing baseline schedule and budget, LCB mods, changes and updates, reporting, resource loading, etc. Based on current/proposed crew makeup and determined duration periods.	ide and budget, LCB mox	is, chenges ar	od updates,	reporting, re	source load	ing, etc. Based on c	зитепбргоро	sed crew makeup an	d determined	
F28	CW	U.C. per months		10	74.02	740.2	0		0	0	740.2
PROJECT MANAGEMENT	AGEMENT		12.00 months	120 E	E28	\$8,882	90	••	0\$	9	\$8,882
Subtotal						\$8,882	0.56	"		S	\$8,882
Sales Tax						\$0	0.5	₩	\$0 \$0	9	₽
Overheads		%00.0				\$0	\$0	\$	0\$ 0	\$0	\$0
Subtotal Estimate Escalation						0\$	8 8		05	9	\$8,882 \$0
Contingency						300,16	0.00	<u> </u>		3	200'1¢
-Total Project Mans	-Total Project Management (IC) (Annual)			420		\$10,215	\$	•	2	9	\$10,216

Remedy Failure or Replacement

Memo: Warning signs and physical barriers replacement. (ers replacement (Annual	costs) See Institutio	Annual costs) See Institutional Controls WBS No. P.4.C1.03.02,ID # ERM3200100, "Maintain Institutional Controls" for basis of estimate.	.4.C1.03.02,ID # ERN	43200100, "Meinte	in institutional C	ontrois" for basis	of estimate.	
U21 LABORER	U.C. per ea	1.00	40 \$21.47 40 U21	858.8 \$859	° 0\$	° •	0\$	° 05	858.8 \$859
	:				•	•		c	7 9007
X12 CWI ENVIRONMENTAL RESTORATION	U.C. per sa	1.00 ea	40 X12	\$1,896	3 Og	°	° g)	\$1,896
MBO	U.C. oertor	NM80		0	0	0	908	0	908
OTHER - SERVICES		1.00 Lot	0	0\$	9	9	\$800	0 5	\$800
Surfice				\$2.755	os	25	\$800	0\$	\$3,555
Sales Tax				Q.	0\$	<u>.</u>	0	0\$	\$0
Overheads	0.00%			0.50	0\$	\$0	\$0	\$0	\$0
Subfotal Estimate				:		\$		6	\$3,555
Escalation Contingency				\$413 \$413	g g	Q Q	\$120	80	\$533
Total Remedy Failure or Replacement			80	\$3,168	\$	0\$	\$920	Ş	\$4,088

Material Costs where applicable include Idaho State Sales Tax Page No. 15

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Estimating Services Department

Client: L. Cahn, 6-3080
Prepared By: J. Folker, 6-0322
Estimate Type: Project Support

DETAIL ITE

OU 3-14 RUFS Atternative 5- Contingent Snake River Plain Aquifer Pump and Treat

Project Location: INTEC Tank Farm

Estimate Number: 2966-M-5

6109.32 \$6.109 155 \$155 2398 \$2,398 0.01 \$0 36.17 58.69 \$1,643 146.04 \$146 14834.15 \$14.934 \$5,309.29 \$5,309 8747 \$8,747 50.0 0.01 TOTAL 50 9 0 \$0.04 200 ° 0 ာ င္အ ۰ <u>۵</u> o 🖁 ° 0 ° 0 9 0.01 \$0 Other Material Subcontractor ၀ ၀ ° 5 ° 😪 ٥ ۾ ٥ 🖨 ° 8 ° 0 o 0 ٥ ° 00 155 \$155 ٥ <u>۾</u> 36.17 58.69 \$1,643 ٠ <u>ي</u> ۵ ° 2398 \$2,398 o g ° 0 8747 \$8,747 ့ မှ 900 Establish guideline, review remedy, write report, review report, publish report. Based on FY 2004 OU 1-10 LTS and Five Year Review actual costs. o 8 90 ° 0¢ ၀ 🔉 ° 😅 ° 😅 ° 0 ၀ ၀ ۰ ۵ ° 9 o S ۵ b Equipment 6109.32 \$6,109 ° 0 ° 0 ° 0 99 ° 0 14934.15 \$14,934 \$5,309.29 ° 0 ၀ ဋ္ဌ ° 0 Resource Labor \$72.73 209 \$47.41 X12 \$72.73 209 536.51 T08 315 22 뛷 0 22 0 o MON NRPG 28.00 hrs NM60 1.00 LS NRPF 5.00 hrs NM60 1.00 LS NM80 က ë 2 8 ë 4 1.00 LS 8 8 8 8 1.00 8 à U.C. per LS U.C. per LS U.C. per LS U.C. perhis U.C. perhis U.C. perea U.C. per ea U.C. per LS U.C. perLS U.C. per LS U.C. per ea U.C. peres Contractor CWI ENVIRONMENTAL RESTORATION Š CWI SUPERVISOR, SCIENG FUND CWI OTHER-DIRECT PURCHASES ₹ CWI ELECTRONIC PUBLICATIONS ₹ ₹ CWI SUPERVISOR, SCI/ENG FUNC CWI OTHER-DIRECT PURCHASES ₹ ₹ ILLUSTRATOR/ARTIST OTHER - SERVICES Code Description WRITER/EDITOR *Assemble Data* *Establish Team* *Prepare Draft* Five Year Reviews Memo: NRPG NM60 NM60 NM80 108 Z09 X 60Z

Client: L. Cehn, 6-3080
Prepared By: J. Folker, 6-0322
Estimate Type: Project Support Project Name: WAG 3
OU 3-14 RUFS Attamative 5- Contingent Snake River Plain Aquifer Pump and Treat Project Location: WTEC Tank Farm
Estimate Number: 2966-M-5

Code Description Contractor	•	Qty NOM	뜀	Resource Labor	Labor	Equipment	Materia	Subcontractor	Other	TOTAL
Five Year Reviews										
Memo: Establish guideline, review remedy, write report, review report, publish report. Based on FY 2004 OU 1-10 LTS and Five Year Review actual costs.	sedy, write report, review rep	ort, publish report.	Based on F	Y 2004 OU 1-1	OLTS and F	iva Yeer Review ac	tual costs.			
Z09 CWI SUPERVISOR, SCIFENG FUNC	U.C. per ea	1.00 ea	22	\$72.73 Z09	3927.42 \$3,927	° 0 \$	•	0\$ 0\$	° 0\$	3927.42 \$3,927
CWI OTHER-DIRECT PURCHASES	U.C. per LS	NM60 1.00 LS	0		° 95	0 00	1527 \$1,527	0 22 27 \$0	° 0 \$	1527 \$1,527
Subtotal Sales Tax Overheads	%00:0	į		1	\$30,426 \$0 \$0	0,00	\$14,496 \$0	\$155 \$0 \$0 \$0 \$0	08	\$45,077 \$0 \$0
Subtotal Estimate Escalation Contingency					\$0 \$4.564	0\$	\$0 \$2,174	60 \$0 74 \$23	\$0 \$0	\$45,077 \$0 \$6,762
Total Five Year Reviews			930		\$34.990	S	116,671	1178	3	\$61,838

Periodic	
Controls Plan (
pdate Institutional	
-1	

Memo: IC annue Controls	IC annuel report-ORB review, incorporate agency co Controls Estimate. ID # ERM3200045. 1 year costs.	porate agency commer. 45. 1 year costs.	its, revise IC plan, pn	r comments, revise iC plan, prep, graphic support, tech edit, doc control, revise iC plan-ORB review. Ref WBS P.4.C1.03.02 institutional ta.	sh edil, doc control, r	evise IC plan-OR	B review. Ref WBS	P.4.C1.03.02 Inst	Ututhonal	
CWI ENVIRONMENTAL RESTORATION Memo: For prep, lech edit, doc confroi	CWI ENVIRONMENTAL RESTORATION R. For prep, tech edit, doc control.	U.C. per ea	1.00 ea	260 \$47.41 260 X12	12326.6 \$12,327	0 0\$	° 0 \$	Ф 9	o 05	12326.6 \$12,327
NRPG WRITER/EDITOR Memo: For tech edit	ς. O.	U.C. per hrs	NRPG 60.00 hrs	o	o os	° 09	58.69 \$3,521	0\$	0 <u>0</u>	58.69 \$3,521
NRPR RECORDS MANAGEMENT Memo: For prep doc control.	CWI JAGEMENT control.	U.C. per hrs	NRPR 18.00 hrs	0	o 05	o s	38.38 \$691	0 \$	% %	38.38 \$691
S05 GEOLOGY Memo: ORB review	cw	U.C. perea	1.00 ea	14 \$60.57 14 \$05	847.98 \$848	° 0 5	° 0	9 G	0 9	847.98 \$848

Material Costs where applicable include idaho State Sales Tax Page No. 17

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Estimating Services Department

Project Name: WAG 3 OU 3-14 RUFS Alternative 5- Contingent Project Location: WIEC Tank Farm	DETAIL ITE ontingent Snake River Plain Aquifer Pump and Treat	rer Plain	Aquifer P	DETA ump en	IL ITEM I d Treat	DETAIL ITEM REPORT		Q	Client: L. Cahn, 6-3080 Prepared By: J. Folker, 8-0322 Estimate Type: Project Support	L. Cahn, 6-3080 J. Folker, 6-0322 Project Support	
Code Description Code Description Contractor Update Institutional Controls Plan (Periodic)	Oty.		MON	<u> 2</u>	Resource Labor	Labor	Equipment	Material	Subcontractor	Other	TOTAL
Memo: IC annual report-ORB review, incorporate agency comments, revise IC plan, prep, graphic support, tech edit, doc control, revise IC plan-ORB review. Ref WBS P.4.C1.03.02 Institutional Controls Estimate. ID # ERM3200048. 1 year costs.	i egency comments, ri year costs.	wise IC pi	an, prep, g	rephic su	ipport, tach	edit, doc cor	itrol, revise IC plan	-ORB review.	Ref WBS P.4.C1.03.0	2 institutional	
X12 CWI ENVIRONMENTAL RESTORATION Memo: Incorporate ORB, agency comments.	U.C. per ea	1.00 ea		22 \$47.41 22 X12	12.41 12	1043.02 \$1,043	⇔	9	0 0 0 0 0	° 9	1043.02 \$1,043
Subtotal Sales Tax Overheads	%00.0					\$14,218 \$0 \$0	0\$	\$4,212 \$0 \$0	212 \$0 \$0 \$0 \$0	\$0 \$0 \$0	\$18,430 \$0 \$0
Subtocal Estimate Escalation Contringency						\$0 \$2,133	0\$ 20	\$0 \$632	\$0 \$0 532 \$0	\$0	\$18,430 \$0 \$2,764
Total Update institutional Controls Plan (Periodic)			286	_		\$16,350	0\$	77 873	2	2	\$21,194

Subtotal OU 3-14 FS ALTERNATIVE 5-CONTINGENT SRPA PUMP AND TREAT Sales Tax FOR CLEANUP Overheads	PAND TREAT	\$2,383,905 \$0 \$0	0, 0, 0, 0, 0, 0,	\$22,087 \$0 \$0	\$6,531,351 \$122,472 \$0 \$0 \$0 \$0	\$122,472 \$0 \$0	\$9,059,815 \$0 \$0
Subtofal Estimate Escalation Contingency		\$0 \$227,479	\$00	\$0 \$3,313	\$0 \$2,281,610 \$18,371	\$0 \$18,371	\$9,059,815 \$0 \$2,530,773
Total OU 3-14 FS ALTERNATIVE 5-CONTINGENT SRPA PUMP AND TREAT FOR CLEANUP	20,381	\$2,611,384	0\$	\$25,400	\$8,812,960	\$140,843	\$11,590,588

Material Costs where applicable include (deho State Sales Tax Page No. 18

Estimating Services Department

04/22/2006 18:47:44

COST ESTIMATE SUMMARY SHEET

Project: OU 3-14 Tank Farm

				ALTERN	NATIVES			
DESCRIPTION	#1 Limited Action	#2a Inst Ctrls, Monitoring Containment (By 2012)	#2b Inst Ctrls, Monitoring Containment (By 2035)	#3a Inst Ctrls, Monitoring Source Removal Containment (By 2012)	#3b Inst Ctrls, Monitoring Source Removal Containment (By 2035)	#4a Inst Ctrls, Monitoring Source Treatment Containment (By 2012)	#4b Inst Ctrls, Monitoring Source Treatment Containment (By 2035)	#5 Contingent SRPA Pump & Treat for Cleanup (By 2070)
TOTAL PROJECT DURATION (Years)	84.00	84.00	84.00	84.00	84.00	84.00	84.00	84.00
CAPITAL COST -								
Capital Cost Subtotal	\$0	\$8,693,917	\$7,990,233	\$38,180,310	\$37,396,015	\$12,947,994	\$12,163,699	\$7,982,665
Contingency	\$0	\$2,012,642	\$1,595,650	\$20,514,281	\$20,134,014	\$3,775,635	\$3,349,883	\$2,369,255
Total Capital Cost in FY06 Dollars	\$0	\$10,706,559	\$9,585,883	\$58,694,591	\$57,530,029	\$16,723,629	\$15,513,582	\$10,351,920
Total Capital Cost in Escalated Dollars	\$0	\$14,913,687	\$17,846,333	\$81,758,553	\$107,105,432	\$23,295,157	\$28,882,114	\$49,766,367
Total Capital Cost in Net Present Value	\$0	\$6,887,890	\$3,700,240	\$37,760,207	\$22,207,130	\$10,758,874	\$5,988,388	\$572,277
OPERATION AND MAINTENANCE COSTS (O&M) -								
O&M Cost Subtotal	\$11,174,911	\$11,174,911	\$11,174,911	\$11,174,911	\$11,174,911	\$11,174,911	\$11,174,911	\$20,520,325
Contingency	\$1,676,237	\$1,676,237	\$1,676,237	\$1,676,237	\$1,676,237	\$1,676,237	\$1,676,237	\$3,078,049
Total O&M Cost in FY06 Dollars	\$12,851,148	\$12,851,148	\$12,851,148	\$12,851,148	\$12,851,148	\$12,851,148	\$12,851,148	\$23,598,374
Total O&M Cost in Escalated Dollars	\$47,064,159	\$47,064,159	\$46,373,508	\$47,064,159	\$47,064,159	\$47,064,159	\$47,064,159	\$149,427,095
Total O&M Cost in Net Present Value	\$2,658,711	\$2,658,711	\$2,656,021	\$2,658,711	\$2,658,711	\$2,658,711	\$2,658,711	\$845,539
PERIODIC COSTS -								
Periodic Cost Subtotal	\$2,636,141	\$11,462,942	\$11,462,942	\$11,462,942	\$11,462,942	\$11,462,942	\$11,462,942	
Contingency	\$395,421	\$1,719,441	\$1,719,441	\$1,719,441	\$1,719,441	\$1,719,441	\$1,719,441	
Total Periodic Cost in FY06 Dollars	\$3,031,562	\$13,182,383	\$13,182,383	\$13,182,383	\$13,182,383	\$13,182,383	\$13,182,383	
Total Periodic Cost in Escalated Dollars	\$11,092,941	\$48,331,325	\$48,331,325	\$48,331,325	\$48,331,325	\$48,331,325	\$48,331,325	
Total Periodic Cost in Net Present Value	\$635,049	\$2,682,015	\$2,682,015	\$2,682,015	\$2,682,015	\$2,682,015	\$2,682,015	
TOTAL PROJECT COST IN 2006 DOLLARS	\$15,882,710	\$36,740,090	\$35,619,413	\$84,728,122	\$83,563,560	\$42,757,160	\$41,547,113	\$33,950,294
TOTAL PROJECT COST IN ESCALATED DOLLARS	\$58,157,100	\$110,309,171	\$112,551,166	\$177,154,037	\$202,500,915	\$118,690,641	\$124,277,598	\$199,193,462
TOTAL PROJECT COST IN NET PRESENT VALUE	\$3,293,760	\$12,228,616	\$9,038,276	\$43,100,933	\$27,547,856	\$16,099,600	\$11,329,113	\$1,417,816

Level Summaries

Project: <u>OU 3-14 Tank Farm</u>

	,		AL	TERNATIVES			,	
DESCRIPTION	#1 Limited Action	#2a Inst Ctrls, Monitoring Containment (By 2012)	#2b Inst Ctrls, Monitoring Containment (By 2035)	#3a Inst Ctrls, Monitoring Source Removal Containment (By 2012)	#3b Inst Ctrls, Monitoring Source Removal Containment (By 2035)	#4a Inst Ctrls, Monitoring Source Treatment Containment (By 2012)	#4b Inst Ctrls, Monitoring Source Treatment Containment (By 2035)	#5 Contingent SRPA Pump & Treat for Cleanup (By 2070)
<u>CAPITAL COST -</u>		\$8,693,916	\$7,990,234	\$38,180,310	\$37,396,015	\$12,947,994	\$12,163,699	\$7,982,665
Construction Activities		\$7,305,812	\$6,714,482	\$32,084,294	\$31,425,223	\$10,880,667	\$10,221,596	\$6,708,122
Professional/Technical Services (Capital)		\$1,388,104	\$1,275,752	\$6,096,016	\$5,970,792	\$2,067,327	\$1,942,103	\$1,274,543
Institutional Controls (Capital)		-						
OPERATION AND MAINTENANCE (O&M) COSTS -	\$11,174,911	\$11,174,911	\$11,174,911	\$11,174,911	\$11,174,911	\$11,174,911	\$11,174,911	\$20,520,325
O&M Activities	\$6,962,289	\$6,962,289	\$6,962,289	\$6,962,289	\$6,962,289	\$6,962,289	\$6,962,289	
Surveillance and Monitoring	\$3,036,346	\$3,036,346	\$3,036,346	\$3,036,346	\$3,036,346	\$3,036,346	\$3,036,346	\$20,520,325
Institutional Controls (O&M)	\$1,176,276	\$1,176,276	\$1,176,276	\$1,176,276	\$1,176,276	\$1,176,276	\$1,176,276	
PERIODIC COSTS -	\$2,636,141	\$11,462,942	\$11,462,942	\$11,462,942	\$11,462,942	\$11,462,942	\$11,462,942	
Construction/O&M Activities (Periodic)	\$295,065	\$9,121,866	\$9,121,866	\$9,121,866	\$9,121,866	\$9,121,866	\$9,121,866	
Professional/Technical Services (Periodic)	\$811,386	\$811,386	\$811,386	\$811,386	\$811,386	\$811,386	\$811,386	
Update Institutional Controls Plan (Periodic)	\$1,529,690	\$1,529,690	\$1,529,690	\$1,529,690	\$1,529,690	\$1,529,690	\$1,529,690	
TOTAL PROJECT COST IN FY06 Dollars	\$13,811,052	\$31,331,769	\$30,628,087	\$60,818,163	\$60,033,868	\$35,585,847	\$34,801,552	\$28,502,990

For contingencies, see "Summary Cost Estimate Sheet"

Discount Rate 0.070	PROJECT:	OU 3-14 Tank Farm	ALTERNATIVE:	#1 Limited Action

		,			CAPITAL COST		ANNUAL ODEDAT	ION AND MAINTEN	ANCE (O&M) COST		PERIODIC COST	
Year	Escalation Rate	Discount Rate	Year	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%
			2004									
	_		2005									
0	1.000	1.000	2006	\$0		\$0	\$0	\$0	\$0	\$0	\$0	\$0
1	1.027	0.935	2007	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	1.054	0.873	2008	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3	1.079	0.816	2009	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
4	1.105	0.763	2010	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
5	1.131	0.713	2011	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6	1.159	0.666	2012	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	1.186	0.623	2013	\$0	\$0	\$0	\$234,667	\$278,400	\$173,374	\$67,062	\$79,560	\$49,546
8	1.215	0.582	2014	\$0	\$0	\$0	\$106,937	\$129,911	\$75,609	\$21,985	\$26,708	\$15,544
9	1.244	0.544	2015	\$0	\$0	\$0	\$234,667	\$291,924	\$158,787	\$67,062	\$83,425	\$45,377
10	1.274	0.508	2016	\$0	\$0	\$0	\$106,937	\$136,221	\$69,248	\$21,985	\$28,006	\$14,237
11	1.304	0.475	2017	\$0	\$0	\$0	\$106,937	\$139,491	\$66,271	\$21,985	\$28,678	\$13,625
12	1.336	0.444	2018	\$0	\$0	\$0	\$106,937	\$142,839	\$63,422	\$21,985	\$29,366	\$13,039
13	1.368	0.415	2019	\$0	\$0	\$0	\$106,937	\$146,267	\$60,695	\$21,985	\$30,071	\$12,478
14	1.401	0.388	2020	\$0	\$0	\$0	\$234,667	\$328,677	\$127,467	\$67,062	\$93,928	\$36,427
15	1.434	0.362	2021	\$0	\$0	\$0	\$106,937	\$153,372	\$55,589	\$21,985	\$31,531	\$11,428
16	1.469	0.339	2022	\$0	\$0	\$0	\$106,937	\$157,053	\$53,199	\$21,985	\$32,288	\$10,937
17	1.504	0.317	2023	\$0	\$0	\$0	\$106,937	\$160,822	\$50,912	\$21,985	\$33,063	\$10,467
18	1.540	0.296	2024	\$0	\$0	\$0	\$106,937	\$164,682	\$48,723	\$21,985	\$33,857	\$10,017
19	1.577	0.277	2025	\$0	\$0	\$0	\$234,667	\$370,057	\$102,324	\$67,062	\$105,753	\$29,242
20	1.615	0.258	2026	\$0	\$0	\$0	\$106,937	\$172,681	\$44,624	\$21,985	\$35,501	\$9,174
21	1.654	0.242	2027	\$0	\$0	\$0	\$106,937	\$176,826	\$42,706	\$21,985	\$36,353	\$8,780
22	1.693	0.226	2028	\$0	\$0	\$0	\$106,937	\$181,069	\$40,870	\$21,985	\$37,226	\$8,402
23	1.734	0.211	2029	\$0	\$0	\$0	\$106,937	\$185,415	\$39,113	\$21,985	\$38,119	\$8,041
24	1.775	0.197	2030	\$0	\$0	\$0	\$234,667	\$416,648	\$82,141	\$67,062	\$119,068	\$23,474
25	1.818	0.184	2031	\$0	\$0	\$0	\$106,937	\$194,422	\$35,822	\$21,985	\$39,971	\$7,365

Discount Rate 0.070	PROJECT:	OU 3-14 Tank Farm	ALTERNATIVE:	#1 Limited Action

					CAPITAL COST		ANNUAL OPERAT	ION AND MAINTEN	ANCE (O&M) COST		PERIODIC COST	
Year	Escalation Rate	Discount Rate	Year	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%
26	1.862	0.172	2032	\$0	\$0	\$0	\$106,937	\$199,088	\$34,282	\$21,985	\$40,930	\$7,048
27	1.906	0.161	2033	\$0	\$0	\$0	\$106,937	\$203,866	\$32,808	\$21,985	\$41,912	\$6,745
28	1.952	0.150	2034	\$0	\$0	\$0	\$106,937	\$208,759	\$31,398	\$21,985	\$42,918	\$6,455
29	1.999	0.141	2035	\$0	\$0	\$0	\$234,667	\$469,103	\$65,939	\$67,062	\$134,058	\$18,844
30	2.047	0.131	2036	\$0	\$0	\$0	\$106,937	\$218,899	\$28,756	\$21,985	\$45,003	\$5,912
31	2.096	0.123	2037	\$0	\$0	\$0	\$106,937	\$224,153	\$27,520	\$21,985	\$46,083	\$5,658
32	2.146	0.115	2038	\$0	\$0	\$0	\$106,937	\$229,533	\$26,337	\$21,985	\$47,189	\$5,415
33	2.198	0.107	2039	\$0	\$0	\$0	\$106,937	\$235,041	\$25,205	\$21,985	\$48,322	\$5,182
34	2.251	0.100	2040	\$0	\$0	\$0	\$234,667	\$528,164	\$52,932	\$67,062	\$150,936	\$15,127
35	2.305	0.094	2041	\$0	\$0	\$0	\$106,937	\$246,459	\$23,084	\$21,985	\$50,669	\$4,746
36	2.360	0.088	2042	\$0	\$0	\$0	\$106,937	\$252,374	\$22,092	\$21,985	\$51,885	\$4,542
37	2.417	0.082	2043	\$0	\$0	\$0	\$106,937	\$258,431	\$21,142	\$21,985	\$53,130	\$4,347
38	2.475	0.076	2044	\$0	\$0	\$0	\$106,937	\$264,633	\$20,233	\$21,985	\$54,405	\$4,160
39	2.534	0.071	2045	\$0	\$0	\$0	\$234,667	\$594,659	\$42,491	\$67,062	\$169,939	\$12,143
40	2.595	0.067	2046	\$0	\$0	\$0	\$106,937	\$277,488	\$18,531	\$21,985	\$57,048	\$3,810
41	2.657	0.062	2047	\$0	\$0	\$0	\$106,937	\$284,148	\$17,734	\$21,985	\$58,417	\$3,646
42	2.721	0.058	2048	\$0	\$0	\$0	\$106,937	\$290,967	\$16,972	\$21,985	\$59,819	\$3,489
43	2.786	0.055	2049	\$0	\$0	\$0	\$106,937	\$297,950	\$16,242	\$21,985	\$61,255	\$3,339
44	2.853	0.051	2050	\$0	\$0	\$0	\$234,667	\$669,527	\$34,110	\$67,062	\$191,334	\$9,748
45	2.922	0.048	2051	\$0	\$0	\$0	\$106,937	\$312,424	\$14,876	\$21,985	\$64,231	\$3,058
46	2.992	0.044	2052	\$0	\$0	\$0	\$106,937	\$319,922	\$14,236	\$21,985	\$65,772	\$2,927
47	3.063	0.042	2053	\$0	\$0	\$0	\$106,937	\$327,600	\$13,624	\$21,985	\$67,351	\$2,801
48	3.137	0.039	2054	\$0	\$0	\$0	\$106,937	\$335,462	\$13,038	\$21,985	\$68,967	\$2,681
49	3.212	0.036	2055	\$0	\$0	\$0	\$234,667	\$753,820	\$27,382	\$67,062	\$215,423	\$7,825
50	3.289	0.034	2056	\$0	\$0	\$0	\$106,937	\$351,758	\$11,941	\$21,985	\$72,317	\$2,455
51	3.368	0.032	2057	\$0	\$0	\$0	\$106,937	\$360,200	\$11,428	\$21,985	\$74,053	\$2,349
52	3.449	0.030	2058	\$0	\$0	\$0	\$106,937	\$368,845	\$10,937	\$21,985	\$75,830	\$2,248
53	3.532	0.028	2059	\$0	\$0	\$0	\$106,937	\$377,697	\$10,467	\$21,985	\$77,650	\$2,152

Discount Rate 0.070	PROJECT:	OU 3-14 Tank Farm	ALTERNATIVE:	#1 Limited Action

					CAPITAL COST		ANNUAL OPERAT	ION AND MAINTEN	ANCE (O&M) COST		PERIODIC COST	
Year	Escalation Rate	Discount Rate	Year	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%
54	3.617	0.026	2060	\$0	\$0	\$0	\$234,667	\$848,726	\$21,981	\$67,062	\$242,545	\$6,282
55	3.704	0.024	2061	\$0	\$0	\$0	\$106,937	\$396,044	\$9,586	\$21,985	\$81,422	\$1,971
56	3.792	0.023	2062	\$0	\$0	\$0	\$106,937	\$405,549	\$9,174	\$21,985	\$83,376	\$1,886
57	3.883	0.021	2063	\$0	\$0	\$0	\$106,937	\$415,282	\$8,779	\$21,985	\$85,377	\$1,805
58	3.977	0.020	2064	\$0	\$0	\$0	\$106,937	\$425,249	\$8,402	\$21,985	\$87,426	\$1,727
59	4.072	0.018	2065	\$0	\$0	\$0	\$234,667	\$955,581	\$17,645	\$67,062	\$273,081	\$5,043
60	4.170	0.017	2066	\$0	\$0	\$0	\$106,937	\$445,906	\$7,695	\$21,985	\$91,673	\$1,582
61	4.270	0.016	2067	\$0	\$0	\$0	\$106,937	\$456,608	\$7,364	\$21,985	\$93,873	\$1,514
62	4.372	0.015	2068	\$0	\$0	\$0	\$106,937	\$467,566	\$7,048	\$21,985	\$96,126	\$1,449
63	4.477	0.014	2069	\$0	\$0	\$0	\$106,937	\$478,788	\$6,745	\$21,985	\$98,433	\$1,387
64	4.585	0.013	2070	\$0	\$0	\$0	\$234,667	\$1,075,888	\$14,165	\$67,062	\$307,462	\$4,048
65	4.695	0.012	2071	\$0	\$0	\$0	\$106,937	\$502,045	\$6,177	\$21,985	\$103,215	\$1,270
66	4.807	0.011	2072	\$0	\$0	\$0	\$106,937	\$514,095	\$5,912	\$21,985	\$105,692	\$1,215
67	4.923	0.011	2073	\$0	\$0	\$0	\$106,937	\$526,433	\$5,658	\$21,985	\$108,228	\$1,163
68	5.041	0.010	2074	\$0	\$0	\$0	\$106,937	\$539,067	\$5,414	\$21,985	\$110,826	\$1,113
69	5.162	0.009	2075	\$0	\$0	\$0	\$234,667	\$1,211,342	\$11,371	\$67,062	\$346,172	\$3,249
70	5.286	0.009	2076	\$0	\$0	\$0	\$106,937	\$565,253	\$4,959	\$21,985	\$116,209	\$1,019
71	5.413	0.008	2077	\$0	\$0	\$0	\$106,937	\$578,819	\$4,746	\$21,985	\$118,998	\$976
72	5.543	0.008	2078	\$0	\$0	\$0	\$106,937	\$592,711	\$4,542	\$21,985	\$121,854	\$934
73	5.676	0.007	2079	\$0	\$0	\$0	\$106,937	\$606,936	\$4,346	\$21,985	\$124,779	\$894
74	5.812	0.007	2080	\$0	\$0	\$0	\$234,667	\$1,363,850	\$9,128	\$67,062	\$389,755	\$2,609
75	5.951	0.006	2081	\$0	\$0	\$0	\$106,937	\$636,418	\$3,981	\$21,985	\$130,840	\$818
76	6.094	0.006	2082	\$0	\$0	\$0	\$106,937	\$651,692	\$3,810	\$21,985	\$133,980	\$783
77	6.240	0.005	2083	\$0	\$0	\$0	\$106,937	\$667,333	\$3,646	\$21,985	\$137,196	\$750
78	6.390	0.005	2084	\$0	\$0	\$0	\$106,937	\$683,349	\$3,489	\$21,985	\$140,489	\$717
79	6.544	0.005	2085	\$0	\$0	\$0	\$234,667	\$1,535,559	\$7,327	\$67,062	\$438,825	\$2,094
80	6.701	0.004	2086	\$0	\$0	\$0	\$106,937	\$716,543	\$3,196	\$21,985	\$147,313	\$657
81	6.861	0.004	2087	\$0	\$0	\$0	\$106,937	\$733,740	\$3,058	\$21,985	\$150,848	\$629

Discount Rate 0.070	PROJECT:	OU 3-14 Tank Farm	ALTERNATIVE:	#1 Limited Action

					GARANA GOGT				LINGE (OAND GOOT		DEDICADIG GOOM	
Year	Escalation Rate	Discount Rate	Year	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	PERIODIC COST Escalated Dollars	Net Present Value @ 7%
82	7.026	0.004	2088	\$0	\$0	\$0	\$106,937	\$751,350	\$2,927	\$21,985	\$154,469	\$602
83	7.195	0.004	2089	\$0	\$0	\$0	\$106,937	\$769,382	\$2,801	\$21,985	\$158,176	\$576
84	7.367	0.003	2090	\$0	\$0	\$0	\$234,667	\$1,728,886	\$5,882	\$67,062	\$494,073	\$1,681
85	7.544	0.003	2091	\$0	\$0	\$0	\$106,937	\$806,756	\$2,565	\$21,985	\$165,860	\$527
86	7.725	0.003	2092	\$0	\$0	\$0	\$106,937	\$826,118	\$2,455	\$21,985	\$169,840	\$505
87	7.911	0.003	2093	\$0	\$0	\$0	\$106,937	\$845,945	\$2,349	\$21,985	\$173,916	\$483
88	8.101	0.003	2094	\$0	\$0	\$0	\$106,937	\$866,248	\$2,248	\$21,985	\$178,090	\$462
89	8.295	0.002	2095	\$0	\$0	\$0	\$234,667	\$1,946,552	\$4,722	\$67,062	\$556,276	\$1,349
90	8.494	0.002	2096	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
91	8.698	0.002	2097	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
92	8.907	0.002	2098	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
93	9.120	0.002	2099	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
94	9.339	0.002	2100	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
95	9.563	0.002	2101	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
96	9.793	0.002	2102	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
97	10.028	0.001	2103	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
98	10.269	0.001	2104	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
99	10.515	0.001	2105	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
100	10.767	0.001	2106	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
101	11.026	0.001	2107		\$0	\$0		\$0	\$0		\$0	\$0
102	11.291	0.001	2108									
103	11.561	0.001	2109									
104	11.839	0.001	2110									
105	12.123	0.001	2111									
106	12.414	0.001	2112									
107	12.712	0.001	2113									
108	13.017	0.001	2114									
109	13.329	0.001	2115									

	Discount Rate	0.070	PROJECT:	OU 3-14 Tank Farm			ALTERNATIVE:	#1 Limited Action								
							LIFE CYCLE	COST ANALYS	SIS							
					CAPITAL COST		ANNUAL OPERAT	TION AND MAINTEN	ANCE (O&M) COST		PERIODIC COST					
Year	Escalation Rate	Discount Rate	Year	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%				
110	13.649	0.001	2116													
111	13.977	0.001	2117													
112	14.312	0.001	2118													
113	14.656	0.000	2119													
114	15.008	0.000	2120													
115	15.368	0.000	2121													
116	15.737	0.000	2122													
117	16.114	0.000	2123													
			SUBTOTALS	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$11,174,911</u>	<u>\$40,925,356</u>	<u>\$2,311,922</u>	<u>\$2,636,141</u>	<u>\$9,646,036</u>	<u>\$552,217</u>				
			TOTALS	13,811,052	50,571,391	2,864,139										

Escalation rates were taken from "http://oecm.energy.gov/Portals/2/2004Rates.pdf," Office of Engineering and Construction Management, US Department of Energy (DOE).

Discount rates were taken from "A Guide to Developing and Documenting Cost Estimates During the Feasibility Study," US Army Corps of Engineers (USACE)/US Environmental Protection Agency (EPA).

These numbers do not include contingency. For contingency, see "Summary Cost Estimate Sheet"

Discount Rate 0.070	PROJECT:	OU 3-14 Tank Farm	ALTERNATIVE:	#2a Institutional Controls, Monitoring and Containment (2012)

				CAPITAL COST ANNUAL OPERATION AND MAINTENANCE (O&M) COST				ANCE (O&M) COST		PERIODIC COST		
Year	Escalation Rate	Discount Rate	Year	Current 2006 Dollars	Escalated Dollars	Net Present Value	Current 2006 Dollars	Escalated Dollars	Net Present Value	Current 2006 Dollars	Escalated Dollars	Net Present Value
Tour	Tuto	Tute	2004	2000 Donars	Donars	v uiuc	2000 Donars	Donars	varac	2000 Donars	Donars	v urue
			2005									
0	1.000	1.000	2006	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1	1.027	0.935	2007	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	1.054	0.873	2008	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3	1.079	0.816	2009	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
4	1.105	0.763	2010	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
5	1.131	0.713	2011	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6	1.159	0.666	2012	\$6,520,438	\$7,554,303	\$5,033,751	\$0	\$0	\$0	\$0	\$0	\$0
7	1.186	0.623	2013	\$0	\$0	\$0	\$234,667	\$278,400	\$173,374	\$173,409	\$205,726	\$128,116
8	1.215	0.582	2014	\$0	\$0	\$0	\$106,937	\$129,911	\$75,609	\$128,332	\$155,902	\$90,737
9	1.244	0.544	2015	\$0	\$0	\$0	\$234,667	\$291,924	\$158,787	\$173,409	\$215,719	\$117,337
10	1.274	0.508	2016	\$0	\$0	\$0	\$106,937	\$136,221	\$69,248	\$128,332	\$163,475	\$83,103
11	1.304	0.475	2017	\$0	\$0	\$0	\$106,937	\$139,491	\$66,271	\$128,332	\$167,399	\$79,530
12	1.336	0.444	2018	\$0	\$0	\$0	\$106,937	\$142,839	\$63,422	\$128,332	\$171,416	\$76,111
13	1.368	0.415	2019	\$0	\$0	\$0	\$106,937	\$146,267	\$60,695	\$128,332	\$175,530	\$72,839
14	1.401	0.388	2020	\$0	\$0	\$0	\$234,667	\$328,677	\$127,467	\$173,409	\$242,878	\$94,192
15	1.434	0.362	2021	\$0	\$0	\$0	\$106,937	\$153,372	\$55,589	\$128,332	\$184,057	\$66,711
16	1.469	0.339	2022	\$0	\$0	\$0	\$106,937	\$157,053	\$53,199	\$128,332	\$188,474	\$63,843
17	1.504	0.317	2023	\$0	\$0	\$0	\$106,937	\$160,822	\$50,912	\$128,332	\$192,998	\$61,098
18	1.540	0.296	2024	\$0	\$0	\$0	\$106,937	\$164,682	\$48,723	\$128,332	\$197,630	\$58,471
19	1.577	0.277	2025	\$0	\$0	\$0	\$234,667	\$370,057	\$102,324	\$173,409	\$273,457	\$75,613
20	1.615	0.258	2026	\$0	\$0	\$0	\$106,937	\$172,681	\$44,624	\$128,332	\$207,230	\$53,552
21	1.654	0.242	2027	\$0	\$0	\$0	\$106,937	\$176,826	\$42,706	\$128,332	\$212,203	\$51,250
22	1.693	0.226	2028	\$0	\$0	\$0	\$106,937	\$181,069	\$40,870	\$128,332	\$217,296	\$49,047
23	1.734	0.211	2029	\$0	\$0	\$0	\$106,937	\$185,415	\$39,113	\$128,332	\$222,511	\$46,938
24	1.775	0.197	2030	\$0	\$0	\$0	\$234,667	\$416,648	\$82,141	\$173,409	\$307,885	\$60,698
25	1.818	0.184	2031	\$0	\$0	\$0	\$106,937	\$194,422	\$35,822	\$128,332	\$233,320	\$42,989

Discount Rate 0.070	PROJECT:	OU 3-14 Tank Farm	ALTERNATIVE:	#2a Institutional Controls, Monitoring and Containment (2012)
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					CAPITAL COST		ANNUAL OPERAT	ION AND MAINTEN	ANCE (O&M) COST	PERIODIC COST			
Year	Escalation Rate	Discount Rate	Year	Current 2006 Dollars	Escalated Dollars	Net Present Value	Current 2006 Dollars	Escalated Dollars	Net Present Value	Current 2006 Dollars	Escalated Dollars	Net Present Value	
26	1.862	0.172	2032	\$0	\$0	\$0	\$106,937	\$199,088	\$34,282	\$128,332	\$238,920	\$41,141	
27	1.906	0.161	2033	\$0	\$0	\$0	\$106,937	\$203,866	\$32,808	\$128,332	\$244,654	\$39,372	
28	1.952	0.150	2034	\$0	\$0	\$0	\$106,937	\$208,759	\$31,398	\$128,332	\$250,525	\$37,680	
29	1.999	0.141	2035	\$2,173,479	\$4,555,878	\$559,339	\$234,667	\$469,103	\$65,939	\$173,409	\$346,648	\$48,726	
30	2.047	0.131	2036	\$0	\$0	\$0	\$106,937	\$218,899	\$28,756	\$128,332	\$262,695	\$34,509	
31	2.096	0.123	2037	\$0	\$0	\$0	\$106,937	\$224,153	\$27,520	\$128,332	\$269,000	\$33,026	
32	2.146	0.115	2038	\$0	\$0	\$0	\$106,937	\$229,533	\$26,337	\$128,332	\$275,456	\$31,606	
33	2.198	0.107	2039	\$0	\$0	\$0	\$106,937	\$235,041	\$25,205	\$128,332	\$282,066	\$30,247	
34	2.251	0.100	2040	\$0	\$0	\$0	\$234,667	\$528,164	\$52,932	\$173,409	\$390,291	\$39,115	
35	2.305	0.094	2041	\$0	\$0	\$0	\$106,937	\$246,459	\$23,084	\$128,332	\$295,768	\$27,703	
36	2.360	0.088	2042	\$0	\$0	\$0	\$106,937	\$252,374	\$22,092	\$128,332	\$302,867	\$26,512	
37	2.417	0.082	2043	\$0	\$0	\$0	\$106,937	\$258,431	\$21,142	\$128,332	\$310,135	\$25,372	
38	2.475	0.076	2044	\$0	\$0	\$0	\$106,937	\$264,633	\$20,233	\$128,332	\$317,579	\$24,281	
39	2.534	0.071	2045	\$0	\$0	\$0	\$234,667	\$594,659	\$42,491	\$173,409	\$439,428	\$31,399	
40	2.595	0.067	2046	\$0	\$0	\$0	\$106,937	\$277,488	\$18,531	\$128,332	\$333,005	\$22,238	
41	2.657	0.062	2047	\$0	\$0	\$0	\$106,937	\$284,148	\$17,734	\$128,332	\$340,997	\$21,282	
42	2.721	0.058	2048	\$0	\$0	\$0	\$106,937	\$290,967	\$16,972	\$128,332	\$349,181	\$20,367	
43	2.786	0.055	2049	\$0	\$0	\$0	\$106,937	\$297,950	\$16,242	\$128,332	\$357,562	\$19,492	
44	2.853	0.051	2050	\$0	\$0	\$0	\$234,667	\$669,527	\$34,110	\$173,409	\$494,752	\$25,206	
45	2.922	0.048	2051	\$0	\$0	\$0	\$106,937	\$312,424	\$14,876	\$128,332	\$374,931	\$17,852	
46	2.992	0.044	2052	\$0	\$0	\$0	\$106,937	\$319,922	\$14,236	\$128,332	\$383,929	\$17,084	
47	3.063	0.042	2053	\$0	\$0	\$0	\$106,937	\$327,600	\$13,624	\$128,332	\$393,143	\$16,350	
48	3.137	0.039	2054	\$0	\$0	\$0	\$106,937	\$335,462	\$13,038	\$128,332	\$402,579	\$15,647	
49	3.212	0.036	2055	\$0	\$0	\$0	\$234,667	\$753,820	\$27,382	\$173,409	\$557,041	\$20,234	
50	3.289	0.034	2056	\$0	\$0	\$0	\$106,937	\$351,758	\$11,941	\$128,332	\$422,134	\$14,331	
51	3.368	0.032	2057	\$0	\$0	\$0	\$106,937	\$360,200	\$11,428	\$128,332	\$432,266	\$13,714	
52	3.449	0.030	2058	\$0	\$0	\$0	\$106,937	\$368,845	\$10,937	\$128,332	\$442,640	\$13,125	
53	3.532	0.028	2059	\$0	\$0	\$0	\$106,937	\$377,697	\$10,467	\$128,332	\$453,263	\$12,561	

Discount Rate 0.070	PROJECT:	OU 3-14 Tank Farm	ALTERNATIVE:	#2a Institutional Controls, Monitoring and Containment (2012)
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					CAPITAL COST		ANNUAL OPERAT	ION AND MAINTEN	ANCE (O&M) COST	PERIODIC COST			
Year	Escalation Rate	Discount Rate	Year	Current 2006 Dollars	Escalated Dollars	Net Present Value	Current 2006 Dollars	Escalated Dollars	Net Present Value	Current 2006 Dollars	Escalated Dollars	Net Present Value	
54	3.617	0.026	2060	\$0	\$0	\$0	\$234,667	\$848,726	\$21,981	\$173,409	\$627,173	\$16,243	
55	3.704	0.024	2061	\$0	\$0	\$0	\$106,937	\$396,044	\$9,586	\$128,332	\$475,281	\$11,504	
56	3.792	0.023	2062	\$0	\$0	\$0	\$106,937	\$405,549	\$9,174	\$128,332	\$486,688	\$11,009	
57	3.883	0.021	2063	\$0	\$0	\$0	\$106,937	\$415,282	\$8,779	\$128,332	\$498,368	\$10,536	
58	3.977	0.020	2064	\$0	\$0	\$0	\$106,937	\$425,249	\$8,402	\$128,332	\$510,329	\$10,083	
59	4.072	0.018	2065	\$0	\$0	\$0	\$234,667	\$955,581	\$17,645	\$173,409	\$706,134	\$13,039	
60	4.170	0.017	2066	\$0	\$0	\$0	\$106,937	\$445,906	\$7,695	\$128,332	\$535,119	\$9,235	
61	4.270	0.016	2067	\$0	\$0	\$0	\$106,937	\$456,608	\$7,364	\$128,332	\$547,962	\$8,838	
62	4.372	0.015	2068	\$0	\$0	\$0	\$106,937	\$467,566	\$7,048	\$128,332	\$561,113	\$8,458	
63	4.477	0.014	2069	\$0	\$0	\$0	\$106,937	\$478,788	\$6,745	\$128,332	\$574,579	\$8,094	
64	4.585	0.013	2070	\$0	\$0	\$0	\$234,667	\$1,075,888	\$14,165	\$173,409	\$795,036	\$10,467	
65	4.695	0.012	2071	\$0	\$0	\$0	\$106,937	\$502,045	\$6,177	\$128,332	\$602,490	\$7,413	
66	4.807	0.011	2072	\$0	\$0	\$0	\$106,937	\$514,095	\$5,912	\$128,332	\$616,950	\$7,094	
67	4.923	0.011	2073	\$0	\$0	\$0	\$106,937	\$526,433	\$5,658	\$128,332	\$631,757	\$6,789	
68	5.041	0.010	2074	\$0	\$0	\$0	\$106,937	\$539,067	\$5,414	\$128,332	\$646,919	\$6,498	
69	5.162	0.009	2075	\$0	\$0	\$0	\$234,667	\$1,211,342	\$11,371	\$173,409	\$895,131	\$8,402	
70	5.286	0.009	2076	\$0	\$0	\$0	\$106,937	\$565,253	\$4,959	\$128,332	\$678,344	\$5,951	
71	5.413	0.008	2077	\$0	\$0	\$0	\$106,937	\$578,819	\$4,746	\$128,332	\$694,624	\$5,695	
72	5.543	0.008	2078	\$0	\$0	\$0	\$106,937	\$592,711	\$4,542	\$128,332	\$711,295	\$5,450	
73	5.676	0.007	2079	\$0	\$0	\$0	\$106,937	\$606,936	\$4,346	\$128,332	\$728,366	\$5,216	
74	5.812	0.007	2080	\$0	\$0	\$0	\$234,667	\$1,363,850	\$9,128	\$173,409	\$1,007,828	\$6,745	
75	5.951	0.006	2081	\$0	\$0	\$0	\$106,937	\$636,418	\$3,981	\$128,332	\$763,747	\$4,777	
76	6.094	0.006	2082	\$0	\$0	\$0	\$106,937	\$651,692	\$3,810	\$128,332	\$782,077	\$4,572	
77	6.240	0.005	2083	\$0	\$0	\$0	\$106,937	\$667,333	\$3,646	\$128,332	\$800,847	\$4,375	
78	6.390	0.005	2084	\$0	\$0	\$0	\$106,937	\$683,349	\$3,489	\$128,332	\$820,067	\$4,187	
79	6.544	0.005	2085	\$0	\$0	\$0	\$234,667	\$1,535,559	\$7,327	\$173,409	\$1,134,713	\$5,415	
80	6.701	0.004	2086	\$0	\$0	\$0	\$106,937	\$716,543	\$3,196	\$128,332	\$859,903	\$3,835	

Discount Rate 0.070	PROJECT:	OU 3-14 Tank Farm	ALTERNATIVE:	#2a Institutional Controls, Monitoring and Containment (2012)

				CAPITAL COST			ANNIIAL OPERAT	ION AND MAINTEN	ANCE (O&M) COST	PERIODIC COST			
Year	Escalation Rate	Discount Rate	Year	Current 2006 Dollars	Escalated Dollars	Net Present Value	Current 2006 Dollars	Escalated Dollars	Net Present Value	Current 2006 Dollars	Escalated Dollars	Net Present Value	
81	6.861	0.004	2087	\$0	\$0	\$0	\$106,937	\$733,740	\$3,058	\$128,332	\$880,541	\$3,670	
82	7.026	0.004	2088	\$0	\$0	\$0	\$106,937	\$751,350	\$2,927	\$128,332	\$901,673	\$3,512	
83	7.195	0.004	2089	\$0	\$0	\$0	\$106,937	\$769,382	\$2,801	\$128,332	\$923,314	\$3,361	
84	7.367	0.003	2090	\$0	\$0	\$0	\$234,667	\$1,728,886	\$5,882	\$173,409	\$1,277,573	\$4,347	
85	7.544	0.003	2091	\$0	\$0	\$0	\$106,937	\$806,756	\$2,565	\$128,332	\$968,165	\$3,078	
86	7.725	0.003	2092	\$0	\$0	\$0	\$106,937	\$826,118	\$2,455	\$128,332	\$991,400	\$2,946	
87	7.911	0.003	2093	\$0	\$0	\$0	\$106,937	\$845,945	\$2,349	\$128,332	\$1,015,194	\$2,819	
88	8.101	0.003	2094	\$0	\$0	\$0	\$106,937	\$866,248	\$2,248	\$128,332	\$1,039,559	\$2,698	
89	8.295	0.002	2095	\$0	\$0	\$0	\$234,667	\$1,946,552	\$4,722	\$173,409	\$1,438,420	\$3,489	
90	8.494	0.002	2096	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
91	8.698	0.002	2097	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
92	8.907	0.002	2098	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
93	9.120	0.002	2099	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
94	9.339	0.002	2100	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
95	9.563	0.002	2101	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
96	9.793	0.002	2102	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
97	10.028	0.001	2103	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
98	10.269	0.001	2104	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
99	10.515	0.001	2105	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
100	10.767	0.001	2106	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
101	11.026	0.001	2107		\$0	\$0			\$0			\$0	
102	11.291	0.001	2108										
103	11.561	0.001	2109										
104	11.839	0.001	2110										
105	12.123	0.001	2111										
106	12.414	0.001	2112										
107	12.712	0.001	2113										
108	13.017	0.001	2114										

	Discount Rate	0.070	PROJECT:	OU 3-14 Tank Farm			ALTERNATIVE:	#2a Institutional Controls, Monitoring and Containment (2012)				
					CAPITAL COST		ANNUAL OPERAT	TON AND MAINTEN	ANCE (O&M) COST	PERIODIC COST		
Year	Escalation Rate	Discount Rate	Year	Current 2006 Dollars	Escalated Dollars	Net Present Value	Current 2006 Dollars	Escalated Dollars	Net Present Value	Current 2006 Dollars	Escalated Dollars	Net Present Value
109	13.329	0.001	2115	2000 2 02425	2 011412	7 0200	2000 201415	Donas	, 4140	2000 2 0242 5	Donas	, 3240
110	13.649	0.001	2116									
111	13.977	0.001	2117									
112	14.312	0.001	2118									
113	14.656	0.000	2119									
114	15.008	0.000	2120									
115	15.368	0.000	2121									
116	15.737	0.000	2122									
117	16.114	0.000	2123									
			SUBTOTALS	<u>\$8,693,917</u>	<u>\$12,110,180</u>	<u>\$5,593,090</u>	<u>\$11,174,911</u>	<u>\$40,925,356</u>	<u>\$2,311,922</u>	<u>\$11,462,942</u>	<u>\$42,027,239</u>	<u>\$2,332,187</u>
			TOTALS	31,331,770	95,062,775	10,237,199						

Escalation rates were taken from "http://oecm.energy.gov/Portals/2/2004Rates.pdf," Office of Engineering and Construction Management, US Department of Energy (DOE).

Discount rates were taken from "A Guide to Developing and Documenting Cost Estimates During the Feasibility Study," US Army Corps of Engineers (USACE)/US Environmental Protection Agency (EPA).

These numbers do not include contingency. For contingency, see "Summary Cost Estimate Sheet"

Discount Rate 0.070	PROJECT:	OU 3-14 Tank Farm	ALTERNATIVE:	#2b Institutional Controls, Monitoring and Containment (2035)

					CAPITAL COST		ANNUAL OPERAT	ION AND MAINTEN.	ANCE (O&M) COST	PERIODIC COST			
	Escalation	Discount		Current	Escalated	Net Present	Current	Escalated	Net Present	Current	Escalated	Net Present	
Year	Rate	Rate	Year	2006 Dollars	Dollars	Value @ 7%	2006 Dollars	Dollars	Value @ 7%	2006 Dollars	Dollars	Value @ 7%	
			2004										
			2005										
0	1.000	1.000	2006	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
1	1.027	0.935	2007	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
2	1.054	0.873	2008	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3	1.079	0.816	2009	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
4	1.105	0.763	2010	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
5	1.131	0.713	2011	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
6	1.159	0.666	2012	\$1,997,558	\$2,314,286	\$1,542,107	\$0	\$0	\$0	\$0	\$0	\$0	
7	1.186	0.623	2013	\$0	\$0	\$0	\$234,667	\$278,400	\$173,374	\$173,409	\$205,726	\$128,116	
8	1.215	0.582	2014	\$0	\$0	\$0	\$106,937	\$129,911	\$75,609	\$128,332	\$155,902	\$90,737	
9	1.244	0.544	2015	\$0	\$0	\$0	\$234,667	\$291,924	\$158,787	\$173,409	\$215,719	\$117,337	
10	1.274	0.508	2016	\$0	\$0	\$0	\$106,937	\$136,221	\$69,248	\$128,332	\$163,475	\$83,103	
11	1.304	0.475	2017	\$0	\$0	\$0	\$106,937	\$139,491	\$66,271	\$128,332	\$167,399	\$79,530	
12	1.336	0.444	2018	\$0	\$0	\$0	\$106,937	\$142,839	\$63,422	\$128,332	\$171,416	\$76,111	
13	1.368	0.415	2019	\$0	\$0	\$0	\$106,937	\$146,267	\$60,695	\$128,332	\$175,530	\$72,839	
14	1.401	0.388	2020	\$0	\$0	\$0	\$234,667	\$328,677	\$127,467	\$173,409	\$242,878	\$94,192	
15	1.434	0.362	2021	\$0	\$0	\$0	\$106,937	\$153,372	\$55,589	\$128,332	\$184,057	\$66,711	
16	1.469	0.339	2022	\$0	\$0	\$0	\$106,937	\$157,053	\$53,199	\$128,332	\$188,474	\$63,843	
17	1.504	0.317	2023	\$0	\$0	\$0	\$106,937	\$160,822	\$50,912	\$128,332	\$192,998	\$61,098	
18	1.540	0.296	2024	\$0	\$0	\$0	\$106,937	\$164,682	\$48,723	\$128,332	\$197,630	\$58,471	
19	1.577	0.277	2025	\$0	\$0	\$0	\$234,667	\$370,057	\$102,324	\$173,409	\$273,457	\$75,613	
20	1.615	0.258	2026	\$0	\$0	\$0	\$106,937	\$172,681	\$44,624	\$128,332	\$207,230	\$53,552	
21	1.654	0.242	2027	\$0	\$0	\$0	\$106,937	\$176,826	\$42,706	\$128,332	\$212,203	\$51,250	
22	1.693	0.226	2028	\$0	\$0	\$0	\$106,937	\$181,069	\$40,870	\$128,332	\$217,296	\$49,047	
23	1.734	0.211	2029	\$0	\$0	\$0	\$106,937	\$185,415	\$39,113	\$128,332	\$222,511	\$46,938	
24	1.775	0.197	2030	\$0	\$0	\$0	\$234,667	\$416,648	\$82,141	\$173,409	\$307,885	\$60,698	
25	1.818	0.184	2031	\$0	\$0	\$0	\$106,937	\$194,422	\$35,822	\$128,332	\$233,320	\$42,989	

Discount Rate 0.070	PROJECT:	OU 3-14 Tank Farm	ALTERNATIVE:	#2b Institutional Controls, Monitoring and Containment (2035)

				CAPITAL COST ANNUAL OPERATION AND MAINTENANCE (O&M) COST				PERIODIC COST				
Year	Escalation Rate	Discount Rate	Year	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%
26	1.862	0.172	2032	\$0	\$0	\$0	\$106,937	\$199,088	\$34,282	\$128,332	\$238,920	\$41,141
27	1.906	0.161	2033	\$0	\$0	\$0	\$106,937	\$203,866	\$32,808	\$128,332	\$244,654	\$39,372
28	1.952	0.150	2034	\$0	\$0	\$0	\$106,937	\$208,759	\$31,398	\$128,332	\$250,525	\$37,680
29	1.999	0.141	2035	\$5,992,675	\$12,561,377	\$1,542,198	\$234,667	\$469,103	\$65,939	\$173,409	\$346,648	\$48,726
30	2.047	0.131	2036	\$0	\$0	\$0	\$106,937	\$218,899	\$28,756	\$128,332	\$262,695	\$34,509
31	2.096	0.123	2037	\$0	\$0	\$0	\$106,937	\$224,153	\$27,520	\$128,332	\$269,000	\$33,026
32	2.146	0.115	2038	\$0	\$0	\$0	\$106,937	\$229,533	\$26,337	\$128,332	\$275,456	\$31,606
33	2.198	0.107	2039	\$0	\$0	\$0	\$106,937	\$235,041	\$25,205	\$128,332	\$282,066	\$30,247
34	2.251	0.100	2040	\$0	\$0	\$0	\$234,667	\$528,164	\$52,932	\$173,409	\$390,291	\$39,115
35	2.305	0.094	2041	\$0	\$0	\$0	\$106,937	\$246,459	\$23,084	\$128,332	\$295,768	\$27,703
36	2.360	0.088	2042	\$0	\$0	\$0	\$106,937	\$252,374	\$22,092	\$128,332	\$302,867	\$26,512
37	2.417	0.082	2043	\$0	\$0	\$0	\$106,937	\$258,431	\$21,142	\$128,332	\$310,135	\$25,372
38	2.475	0.076	2044	\$0	\$0	\$0	\$106,937	\$264,633	\$20,233	\$128,332	\$317,579	\$24,281
39	2.534	0.071	2045	\$0	\$0	\$0	\$234,667	\$594,659	\$42,491	\$173,409	\$439,428	\$31,399
40	2.595	0.067	2046	\$0	\$0	\$0	\$106,937	\$277,488	\$18,531	\$128,332	\$333,005	\$22,238
41	2.657	0.062	2047	\$0	\$0	\$0	\$106,937	\$284,148	\$17,734	\$128,332	\$340,997	\$21,282
42	2.721	0.058	2048	\$0	\$0	\$0	\$106,937	\$290,967	\$16,972	\$128,332	\$349,181	\$20,367
43	2.786	0.055	2049	\$0	\$0	\$0	\$106,937	\$297,950	\$16,242	\$128,332	\$357,562	\$19,492
44	2.853	0.051	2050	\$0	\$0	\$0	\$234,667	\$669,527	\$34,110	\$173,409	\$494,752	\$25,206
45	2.922	0.048	2051	\$0	\$0	\$0	\$106,937	\$312,424	\$14,876	\$128,332	\$374,931	\$17,852
46	2.992	0.044	2052	\$0	\$0	\$0	\$106,937	\$319,922	\$14,236	\$128,332	\$383,929	\$17,084
47	3.063	0.042	2053	\$0	\$0	\$0	\$106,937	\$327,600	\$13,624	\$128,332	\$393,143	\$16,350
48	3.137	0.039	2054	\$0	\$0	\$0	\$106,937	\$335,462	\$13,038	\$128,332	\$402,579	\$15,647
49	3.212	0.036	2055	\$0	\$0	\$0	\$234,667	\$753,820	\$27,382	\$173,409	\$557,041	\$20,234
50	3.289	0.034	2056	\$0	\$0	\$0	\$106,937	\$351,758	\$11,941	\$128,332	\$422,134	\$14,331
51	3.368	0.032	2057	\$0	\$0	\$0	\$106,937	\$360,200	\$11,428	\$128,332	\$432,266	\$13,714
52	3.449	0.030	2058	\$0	\$0	\$0	\$106,937	\$368,845	\$10,937	\$128,332	\$442,640	\$13,125
53	3.532	0.028	2059	\$0	\$0	\$0	\$106,937	\$377,697	\$10,467	\$128,332	\$453,263	\$12,561

Discount Rate 0.070	PROJECT:	OU 3-14 Tank Farm	ALTERNATIVE:	#2b Institutional Controls, Monitoring and Containment (2035)
Discoult Rate 0.070	PROJECT:	OU 5-14 Tank Farm	ALIEKNATIVE:	#20 Institutional Controls, Monitoring and Contaminent (2005)

					CAPITAL COST		ANNUAL OPERAT	ION AND MAINTEN	ANCE (O&M) COST	PERIODIC COST		
Year	Escalation Rate	Discount Rate	Year	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%
54	3.617	0.026	2060	\$0	\$0	\$0	\$234,667	\$848,726	\$21,981	\$173,409	\$627,173	\$16,243
55	3.704	0.024	2061	\$0	\$0	\$0	\$106,937	\$396,044	\$9,586	\$128,332	\$475,281	\$11,504
56	3.792	0.023	2062	\$0	\$0	\$0	\$106,937	\$405,549	\$9,174	\$128,332	\$486,688	\$11,009
57	3.883	0.021	2063	\$0	\$0	\$0	\$106,937	\$415,282	\$8,779	\$128,332	\$498,368	\$10,536
58	3.977	0.020	2064	\$0	\$0	\$0	\$106,937	\$425,249	\$8,402	\$128,332	\$510,329	\$10,083
59	4.072	0.018	2065	\$0	\$0	\$0	\$234,667	\$955,581	\$17,645	\$173,409	\$706,134	\$13,039
60	4.170	0.017	2066	\$0	\$0	\$0	\$106,937	\$445,906	\$7,695	\$128,332	\$535,119	\$9,235
61	4.270	0.016	2067	\$0	\$0	\$0	\$106,937	\$456,608	\$7,364	\$128,332	\$547,962	\$8,838
62	4.372	0.015	2068	\$0	\$0	\$0	\$106,937	\$467,566	\$7,048	\$128,332	\$561,113	\$8,458
63	4.477	0.014	2069	\$0	\$0	\$0	\$106,937	\$478,788	\$6,745	\$128,332	\$574,579	\$8,094
64	4.585	0.013	2070	\$0	\$0	\$0	\$234,667	\$1,075,888	\$14,165	\$173,409	\$795,036	\$10,467
65	4.695	0.012	2071	\$0	\$0	\$0	\$106,937	\$502,045	\$6,177	\$128,332	\$602,490	\$7,413
66	4.807	0.011	2072	\$0	\$0	\$0	\$106,937	\$514,095	\$5,912	\$128,332	\$616,950	\$7,094
67	4.923	0.011	2073	\$0	\$0	\$0	\$106,937	\$526,433	\$5,658	\$128,332	\$631,757	\$6,789
68	5.041	0.010	2074	\$0	\$0	\$0	\$106,937	\$539,067	\$5,414	\$128,332	\$646,919	\$6,498
69	5.162	0.009	2075	\$0	\$0	\$0	\$234,667	\$1,211,342	\$11,371	\$173,409	\$895,131	\$8,402
70	5.286	0.009	2076	\$0	\$0	\$0	\$106,937	\$565,253	\$4,959	\$128,332	\$678,344	\$5,951
71	5.413	0.008	2077	\$0	\$0	\$0	\$106,937	\$578,819	\$4,746	\$128,332	\$694,624	\$5,695
72	5.543	0.008	2078	\$0	\$0	\$0	\$106,937	\$592,711	\$4,542	\$128,332	\$711,295	\$5,450
73	5.676	0.007	2079	\$0	\$0	\$0	\$106,937	\$606,936	\$4,346	\$128,332	\$728,366	\$5,216
74	5.812	0.007	2080	\$0	\$0	\$0	\$234,667	\$1,363,850	\$9,128	\$173,409	\$1,007,828	\$6,745
75	5.951	0.006	2081	\$0	\$0	\$0	\$106,937	\$636,418	\$3,981	\$128,332	\$763,747	\$4,777
76	6.094	0.006	2082	\$0	\$0	\$0	\$106,937	\$651,692	\$3,810	\$128,332	\$782,077	\$4,572
77	6.240	0.005	2083	\$0	\$0	\$0	\$106,937	\$667,333	\$3,646	\$128,332	\$800,847	\$4,375
78	6.390	0.005	2084	\$0	\$0	\$0	\$106,937	\$683,349	\$3,489	\$128,332	\$820,067	\$4,187
79	6.544	0.005	2085	\$0	\$0	\$0	\$234,667	\$1,535,559	\$7,327	\$173,409	\$1,134,713	\$5,415
80	6.701	0.004	2086	\$0	\$0	\$0	\$106,937	\$716,543	\$3,196	\$128,332	\$859,903	\$3,835
81	6.861	0.004	2087	\$0	\$0	\$0	\$106,937	\$733,740	\$3,058	\$128,332	\$880,541	\$3,670

Discount Rate 0.070	PROJECT:	OU 3-14 Tank Farm	ALTERNATIVE:	#2b Institutional Controls, Monitoring and Containment (2035)

					CAPITAL COST		ANNUAL OPERAT	ION AND MAINTEN	ANCE (O&M) COST		PERIODIC COST	
Year	Escalation Rate	Discount Rate	Year	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%
82	7.026	0.004	2088	\$0	\$0	\$0	\$106,937	\$150,784	\$587	\$128,332	\$901,673	\$3,512
83	7.195	0.004	2089	\$0	\$0	\$0	\$106,937	\$769,382	\$2,801	\$128,332	\$923,314	\$3,361
84	7.367	0.003	2090	\$0	\$0	\$0	\$234,667	\$1,728,886	\$5,882	\$173,409	\$1,277,573	\$4,347
85	7.544	0.003	2091	\$0	\$0	\$0	\$106,937	\$806,756	\$2,565	\$128,332	\$968,165	\$3,078
86	7.725	0.003	2092	\$0	\$0	\$0	\$106,937	\$826,118	\$2,455	\$128,332	\$991,400	\$2,946
87	7.911	0.003	2093	\$0	\$0	\$0	\$106,937	\$845,945	\$2,349	\$128,332	\$1,015,194	\$2,819
88	8.101	0.003	2094	\$0	\$0	\$0	\$106,937	\$866,248	\$2,248	\$128,332	\$1,039,559	\$2,698
89	8.295	0.002	2095	\$0	\$0	\$0	\$234,667	\$1,946,552	\$4,722	\$173,409	\$1,438,420	\$3,489
90	8.494	0.002	2096	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
91	8.698	0.002	2097	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
92	8.907	0.002	2098	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
93	9.120	0.002	2099	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
94	9.339	0.002	2100	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
95	9.563	0.002	2101	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
96	9.793	0.002	2102	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
97	10.028	0.001	2103	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
98	10.269	0.001	2104	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
99	10.515	0.001	2105	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
100	10.767	0.001	2106	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
101	11.026	0.001	2107		\$0	\$0			\$0			\$0
102	11.291	0.001	2108									
103	11.561	0.001	2109									
104	11.839	0.001	2110									
105	12.123	0.001	2111									
106	12.414	0.001	2112									
107	12.712	0.001	2113									
108	13.017	0.001	2114									
109	13.329	0.001	2115									

	Discount Rate	0.070	PROJECT:	OU 3-14 Tank Farm			ALTERNATIVE:	#2b Institutional Controls, Monitoring and Containment (2035)					
							LIFE CYCLE COST ANALYSIS						
					CAPITAL COST		ANNUAL OPERAT	TION AND MAINTEN.	ANCE (O&M) COST		PERIODIC COST		
Year	Escalation Rate	Discount Rate	Year	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	
110	13.649	0.001	2116										
111	13.977	0.001	2117										
112	14.312	0.001	2118										
113	14.656	0.000	2119										
114	15.008	0.000	2120										
115	15.368	0.000	2121										
116	15.737	0.000	2122										
117	16.114	0.000	2123										
			SUBTOTALS	\$7,990,233	<u>\$14,875,663</u>	<u>\$3,084,305</u>	<u>\$11,174,911</u>	<u>\$40,324,789</u>	<u>\$2,309,583</u>	<u>\$11,462,942</u>	<u>\$42,027,239</u>	<u>\$2,332,187</u>	

Escalation rates were taken from "http://oecm.energy.gov/Portals/2/2004Rates.pdf," Office of Engineering and Construction Management, US Department of Energy (DOE).

30,628,086

97,227,692

Discount rates were taken from "A Guide to Developing and Documenting Cost Estimates During the Feasibility Study," US Army Corps of Engineers (USACE)/US Environmental Protection Agency (EPA).

7,726,075

These numbers do not include contingency. For contingency, see "Summary Cost Estimate Sheet"

TOTALS

Discount Rate 0.070 PROJE	CT: OU 3-14 Tank Farm	ALTERNATIVE:	#3a Institutional Controls, Monitoring, Source Removal and Containment (2012)
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					CAPITAL COST			ION AND MAINTEN	ANCE (O&M) COST	PERIODIC COST		
Year	Escalation Rate	Discount Rate	Year	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%
			2004									
			2005									
0	1.000	1.000	2006	\$0	\$0	\$0		\$0	\$0	\$0	\$0	\$0
1	1.027	0.935	2007	\$0	\$0	\$0		\$0	\$0	\$0	\$0	\$0
2	1.054	0.873	2008	\$0	\$0	\$0		\$0	\$0	\$0	\$0	\$0
3	1.079	0.816	2009	\$0	\$0	\$0		\$0	\$0	\$0	\$0	\$0
4	1.105	0.763	2010	\$0	\$0	\$0		\$0	\$0	\$0	\$0	\$0
5	1.131	0.713	2011	\$0	\$0	\$0		\$0	\$0	\$0	\$0	\$0
6	1.159	0.666	2012	\$28,635,233	\$33,175,566	\$22,106,281		\$0	\$0	\$0	\$0	\$0
7	1.186	0.623	2013	\$0	\$0	\$0	\$234,667	\$278,400	\$173,374	\$173,409	\$205,726	\$128,116
8	1.215	0.582	2014	\$0	\$0	\$0	\$106,937	\$129,911	\$75,609	\$128,332	\$155,902	\$90,737
9	1.244	0.544	2015	\$0	\$0	\$0	\$234,667	\$291,924	\$158,787	\$173,409	\$215,719	\$117,337
10	1.274	0.508	2016	\$0	\$0	\$0	\$106,937	\$136,221	\$69,248	\$128,332	\$163,475	\$83,103
11	1.304	0.475	2017	\$0	\$0	\$0	\$106,937	\$139,491	\$66,271	\$128,332	\$167,399	\$79,530
12	1.336	0.444	2018	\$0	\$0	\$0	\$106,937	\$142,839	\$63,422	\$128,332	\$171,416	\$76,111
13	1.368	0.415	2019	\$0	\$0	\$0	\$106,937	\$146,267	\$60,695	\$128,332	\$175,530	\$72,839
14	1.401	0.388	2020	\$0	\$0	\$0	\$234,667	\$328,677	\$127,467	\$173,409	\$242,878	\$94,192
15	1.434	0.362	2021	\$0	\$0	\$0	\$106,937	\$153,372	\$55,589	\$128,332	\$184,057	\$66,711
16	1.469	0.339	2022	\$0	\$0	\$0	\$106,937	\$157,053	\$53,199	\$128,332	\$188,474	\$63,843
17	1.504	0.317	2023	\$0	\$0	\$0	\$106,937	\$160,822	\$50,912	\$128,332	\$192,998	\$61,098
18	1.540	0.296	2024	\$0	\$0	\$0	\$106,937	\$164,682	\$48,723	\$128,332	\$197,630	\$58,471
19	1.577	0.277	2025	\$0	\$0	\$0	\$234,667	\$370,057	\$102,324	\$173,409	\$273,457	\$75,613
20	1.615	0.258	2026	\$0	\$0	\$0	\$106,937	\$172,681	\$44,624	\$128,332	\$207,230	\$53,552
21	1.654	0.242	2027	\$0	\$0	\$0	\$106,937	\$176,826	\$42,706	\$128,332	\$212,203	\$51,250
22	1.693	0.226	2028	\$0	\$0	\$0	\$106,937	\$181,069	\$40,870	\$128,332	\$217,296	\$49,047
23	1.734	0.211	2029	\$0	\$0	\$0	\$106,937	\$185,415	\$39,113	\$128,332	\$222,511	\$46,938
24	1.775	0.197	2030	\$0	\$0	\$0	\$234,667	\$416,648	\$82,141	\$173,409	\$307,885	\$60,698
25	1.818	0.184	2031	\$0	\$0	\$0	\$106,937	\$194,422	\$35,822	\$128,332	\$233,320	\$42,989

Discount Rate 0.070	PROJECT:	OU 3-14 Tank Farm	ALTERNATIVE:	#3a Institutional Controls, Monitoring, Source Removal and Containment (2012)

					CAPITAL COST		ANNUAL OPERAT	TION AND MAINTEN	ANCE (O&M) COST	PERIODIC COST			
Year	Escalation Rate	Discount Rate	Year	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	
26	1.862	0.172	2032	\$0	\$0	\$0	\$106,937	\$199,088	\$34,282	\$128,332	\$238,920	\$41,141	
27	1.906	0.161	2033	\$0	\$0	\$0	\$106,937	\$203,866	\$32,808	\$128,332	\$244,654	\$39,372	
28	1.952	0.150	2034	\$0	\$0	\$0	\$106,937	\$208,759	\$31,398	\$128,332	\$250,525	\$37,680	
29	1.999	0.141	2035	\$9,545,078	\$20,007,647	\$2,456,399	\$234,667	\$469,103	\$65,939	\$173,409	\$346,648	\$48,726	
30	2.047	0.131	2036	\$0	\$0	\$0	\$106,937	\$218,899	\$28,756	\$128,332	\$262,695	\$34,509	
31	2.096	0.123	2037	\$0	\$0	\$0	\$106,937	\$224,153	\$27,520	\$128,332	\$269,000	\$33,026	
32	2.146	0.115	2038	\$0	\$0	\$0	\$106,937	\$229,533	\$26,337	\$128,332	\$275,456	\$31,606	
33	2.198	0.107	2039	\$0	\$0	\$0	\$106,937	\$235,041	\$25,205	\$128,332	\$282,066	\$30,247	
34	2.251	0.100	2040	\$0	\$0	\$0	\$234,667	\$528,164	\$52,932	\$173,409	\$390,291	\$39,115	
35	2.305	0.094	2041	\$0	\$0	\$0	\$106,937	\$246,459	\$23,084	\$128,332	\$295,768	\$27,703	
36	2.360	0.088	2042	\$0	\$0	\$0	\$106,937	\$252,374	\$22,092	\$128,332	\$302,867	\$26,512	
37	2.417	0.082	2043	\$0	\$0	\$0	\$106,937	\$258,431	\$21,142	\$128,332	\$310,135	\$25,372	
38	2.475	0.076	2044	\$0	\$0	\$0	\$106,937	\$264,633	\$20,233	\$128,332	\$317,579	\$24,281	
39	2.534	0.071	2045	\$0	\$0	\$0	\$234,667	\$594,659	\$42,491	\$173,409	\$439,428	\$31,399	
40	2.595	0.067	2046	\$0	\$0	\$0	\$106,937	\$277,488	\$18,531	\$128,332	\$333,005	\$22,238	
41	2.657	0.062	2047	\$0	\$0	\$0	\$106,937	\$284,148	\$17,734	\$128,332	\$340,997	\$21,282	
42	2.721	0.058	2048	\$0	\$0	\$0	\$106,937	\$290,967	\$16,972	\$128,332	\$349,181	\$20,367	
43	2.786	0.055	2049	\$0	\$0	\$0	\$106,937	\$297,950	\$16,242	\$128,332	\$357,562	\$19,492	
44	2.853	0.051	2050	\$0	\$0	\$0	\$234,667	\$669,527	\$34,110	\$173,409	\$494,752	\$25,206	
45	2.922	0.048	2051	\$0	\$0	\$0	\$106,937	\$312,424	\$14,876	\$128,332	\$374,931	\$17,852	
46	2.992	0.044	2052	\$0	\$0	\$0	\$106,937	\$319,922	\$14,236	\$128,332	\$383,929	\$17,084	
47	3.063	0.042	2053	\$0	\$0	\$0	\$106,937	\$327,600	\$13,624	\$128,332	\$393,143	\$16,350	
48	3.137	0.039	2054	\$0	\$0	\$0	\$106,937	\$335,462	\$13,038	\$128,332	\$402,579	\$15,647	
49	3.212	0.036	2055	\$0	\$0	\$0	\$234,667	\$753,820	\$27,382	\$173,409	\$557,041	\$20,234	
50	3.289	0.034	2056	\$0	\$0	\$0	\$106,937	\$351,758	\$11,941	\$128,332	\$422,134	\$14,331	
51	3.368	0.032	2057	\$0	\$0	\$0	\$106,937	\$360,200	\$11,428	\$128,332	\$432,266	\$13,714	
52	3.449	0.030	2058	\$0	\$0	\$0	\$106,937	\$368,845	\$10,937	\$128,332	\$442,640	\$13,125	
53	3.532	0.028	2059	\$0	\$0	\$0	\$106,937	\$377,697	\$10,467	\$128,332	\$453,263	\$12,561	

Discount Data 0.070	DDO IECT.	OU 3-14 Tank Farm	AT TEDNIATINE.	#20 Institutional Controls Monitoring Course Demond and Containment (2012)
Discount Rate 0.070	PROJECT:	OU 3-14 Tank Farm	ALTERNATIVE:	#3a Institutional Controls, Monitoring, Source Removal and Containment (2012)

					CAPITAL COST		ANNUAL OPERAT	TION AND MAINTEN	JANCE (O&M) COST	PERIODIC COST			
Year	Escalation Rate	Discount Rate	Year	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	
54	3.617	0.026	2060	\$0	\$0	\$0	\$234,667	\$848,726	\$21,981	\$173,409	\$627,173	\$16,243	
55	3.704	0.024	2061	\$0	\$0	\$0	\$106,937	\$396,044	\$9,586	\$128,332	\$475,281	\$11,504	
56	3.792	0.023	2062	\$0	\$0	\$0	\$106,937	\$405,549	\$9,174	\$128,332	\$486,688	\$11,009	
57	3.883	0.021	2063	\$0	\$0	\$0	\$106,937	\$415,282	\$8,779	\$128,332	\$498,368	\$10,536	
58	3.977	0.020	2064	\$0	\$0	\$0	\$106,937	\$425,249	\$8,402	\$128,332	\$510,329	\$10,083	
59	4.072	0.018	2065	\$0	\$0	\$0	\$234,667	\$955,581	\$17,645	\$173,409	\$706,134	\$13,039	
60	4.170	0.017	2066	\$0	\$0	\$0	\$106,937	\$445,906	\$7,695	\$128,332	\$535,119	\$9,235	
61	4.270	0.016	2067	\$0	\$0	\$0	\$106,937	\$456,608	\$7,364	\$128,332	\$547,962	\$8,838	
62	4.372	0.015	2068	\$0	\$0	\$0	\$106,937	\$467,566	\$7,048	\$128,332	\$561,113	\$8,458	
63	4.477	0.014	2069	\$0	\$0	\$0	\$106,937	\$478,788	\$6,745	\$128,332	\$574,579	\$8,094	
64	4.585	0.013	2070	\$0	\$0	\$0	\$234,667	\$1,075,888	\$14,165	\$173,409	\$795,036	\$10,467	
65	4.695	0.012	2071	\$0	\$0	\$0	\$106,937	\$502,045	\$6,177	\$128,332	\$602,490	\$7,413	
66	4.807	0.011	2072	\$0	\$0	\$0	\$106,937	\$514,095	\$5,912	\$128,332	\$616,950	\$7,094	
67	4.923	0.011	2073	\$0	\$0	\$0	\$106,937	\$526,433	\$5,658	\$128,332	\$631,757	\$6,789	
68	5.041	0.010	2074	\$0	\$0	\$0	\$106,937	\$539,067	\$5,414	\$128,332	\$646,919	\$6,498	
69	5.162	0.009	2075	\$0	\$0	\$0	\$234,667	\$1,211,342	\$11,371	\$173,409	\$895,131	\$8,402	
70	5.286	0.009	2076	\$0	\$0	\$0	\$106,937	\$565,253	\$4,959	\$128,332	\$678,344	\$5,951	
71	5.413	0.008	2077	\$0	\$0	\$0	\$106,937	\$578,819	\$4,746	\$128,332	\$694,624	\$5,695	
72	5.543	0.008	2078	\$0	\$0	\$0	\$106,937	\$592,711	\$4,542	\$128,332	\$711,295	\$5,450	
73	5.676	0.007	2079	\$0	\$0	\$0	\$106,937	\$606,936	\$4,346	\$128,332	\$728,366	\$5,216	
74	5.812	0.007	2080	\$0	\$0	\$0	\$234,667	\$1,363,850	\$9,128	\$173,409	\$1,007,828	\$6,745	
75	5.951	0.006	2081	\$0	\$0	\$0	\$106,937	\$636,418	\$3,981	\$128,332	\$763,747	\$4,777	
76	6.094	0.006	2082	\$0	\$0	\$0	\$106,937	\$651,692	\$3,810	\$128,332	\$782,077	\$4,572	
77	6.240	0.005	2083	\$0	\$0	\$0	\$106,937	\$667,333	\$3,646	\$128,332	\$800,847	\$4,375	
78	6.390	0.005	2084	\$0	\$0	\$0	\$106,937	\$683,349	\$3,489	\$128,332	\$820,067	\$4,187	
79	6.544	0.005	2085	\$0	\$0	\$0	\$234,667	\$1,535,559	\$7,327	\$173,409	\$1,134,713	\$5,415	
80	6.701	0.004	2086	\$0	\$0	\$0	\$106,937	\$716,543	\$3,196	\$128,332	\$859,903	\$3,835	
81	6.861	0.004	2087	\$0	\$0	\$0	\$106,937	\$733,740	\$3,058	\$128,332	\$880,541	\$3,670	

Discount Pote 0.070	DDO IFCT.	OU 2 14 Tonk Form	AT TEDNIATIVE.	#20 Institutional Controls Monitoring Source Democral and Containment (2012)
Discount Rate 0.070	PROJECT:	OU 3-14 Tank Farm	ALTERNATIVE:	#3a Institutional Controls, Monitoring, Source Removal and Containment (2012)

					CAPITAL COST		ANNUAL OPERATION AND MAINTENANCE (O&M) COST				PERIODIC COST	
Year	Escalation Rate	Discount Rate	Year	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%
82	7.026	0.004	2088	\$0	\$0	\$0	\$106,937	\$751,350	\$2,927	\$128,332	\$901,673	\$3,512
83	7.195	0.004	2089	\$0	\$0	\$0	\$106,937	\$769,382	\$2,801	\$128,332	\$923,314	\$3,361
84	7.367	0.003	2090	\$0	\$0	\$0	\$234,667	\$1,728,886	\$5,882	\$173,409	\$1,277,573	\$4,347
85	7.544	0.003	2091	\$0	\$0	\$0	\$106,937	\$806,756	\$2,565	\$128,332	\$968,165	\$3,078
86	7.725	0.003	2092	\$0	\$0	\$0	\$106,937	\$826,118	\$2,455	\$128,332	\$991,400	\$2,946
87	7.911	0.003	2093	\$0	\$0	\$0	\$106,937	\$845,945	\$2,349	\$128,332	\$1,015,194	\$2,819
88	8.101	0.003	2094	\$0	\$0	\$0	\$106,937	\$866,248	\$2,248	\$128,332	\$1,039,559	\$2,698
89	8.295	0.002	2095	\$0	\$0	\$0	\$234,667	\$1,946,552	\$4,722	\$173,409	\$1,438,420	\$3,489
90	8.494	0.002	2096	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
91	8.698	0.002	2097	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
92	8.907	0.002	2098	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
93	9.120	0.002	2099	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
94	9.339	0.002	2100	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
95	9.563	0.002	2101	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
96	9.793	0.002	2102	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
97	10.028	0.001	2103	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
98	10.269	0.001	2104	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
99	10.515	0.001	2105	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
100	10.767	0.001	2106	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
101	11.026	0.001	2107		\$0	\$0			\$0			\$0
102	11.291	0.001	2108									
103	11.561	0.001	2109									
104	11.839	0.001	2110									
105	12.123	0.001	2111									
106	12.414	0.001	2112									
107	12.712	0.001	2113									
108	13.017	0.001	2114									
109	13.329	0.001	2115									

	Discount Rate	0.070	PROJECT:	OU 3-14 Tank Farm			ALTERNATIVE:	#3a Institutional Co	ntrols, Monitoring, Sourc	e Removal and Contai	inment (2012)	
							<u>LIFE CYCLE COST ANALYSIS</u>					
					CAPITAL COST		ANNUAL OPERAT	ION AND MAINTEN	ANCE (O&M) COST		PERIODIC COST	
Year	Escalation Rate	Discount Rate	Year	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%
110	13.649	0.001	2116									
111	13.977	0.001	2117									
112	14.312	0.001	2118									
113	14.656	0.000	2119									
114	15.008	0.000	2120									
115	15.368	0.000	2121									

<u>\$11,174,911</u>

\$40,925,356

\$2,311,922

Escalation rates were taken from "http://oecm.energy.gov/Portals/2/2004Rates.pdf," Office of Engineering and Construction Management, US Department of Energy (DOE).

\$53,183,213

136,135,807

\$38,180,310

60,818,163

Discount rates were taken from "A Guide to Developing and Documenting Cost Estimates During the Feasibility Study," US Army Corps of Engineers (USACE)/US Environmental Protection Agency (EPA).

\$24,562,680

29,206,789

These numbers do not include contingency. For contingency, see "Summary Cost Estimate Sheet"

2122

2123

SUBTOTALS TOTALS

0.000

0.000

116

117

15.737

16.114

\$11,462,942

\$42,027,239

\$2,332,187

Discount Rate 0.070 PROJECT: OU 3-14 Tank Farm ALTERNATIVE: #30 Institutional Controls, Monitoring, Source Removal and Contain	iscount Rate 0.070	LTERNATIVE: #3b Institutional Controls, Monitoring, Source Removal and Containment (2035)	CT: OU 3-14 Tank Farm
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					CAPITAL COST		ANNUAL OPERATI	ION AND MAINTEN	ANCE (O&M) COST		PERIODIC COST	
Year	Escalation Rate	Discount Rate	Year	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%
1001	Tuto	Tuic	2004	2000 Donars	Donars	value C 170	2000 Donars	Donuis	value C 770	2000 Dollars	Donars	varue e 770
			2005									
0	1.000	1.000	2006	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1	1.027	0.935	2007	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	1.054	0.873	2008	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3	1.079	0.816	2009	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
4	1.105	0.763	2010	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
5	1.131	0.713	2011	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6	1.159	0.666	2012	\$9,349,004	\$10,831,359	\$7,217,392	\$0	\$0	\$0	\$0	\$0	\$0
7	1.186	0.623	2013	\$0	\$0	\$0	\$234,667	\$278,400	\$173,374	\$173,409	\$205,726	\$128,116
8	1.215	0.582	2014	\$0	\$0	\$0	\$106,937	\$129,911	\$75,609	\$128,332	\$155,902	\$90,737
9	1.244	0.544	2015	\$0	\$0	\$0	\$234,667	\$291,924	\$158,787	\$173,409	\$215,719	\$117,337
10	1.274	0.508	2016	\$0	\$0	\$0	\$106,937	\$136,221	\$69,248	\$128,332	\$163,475	\$83,103
11	1.304	0.475	2017	\$0	\$0	\$0	\$106,937	\$139,491	\$66,271	\$128,332	\$167,399	\$79,530
12	1.336	0.444	2018	\$0	\$0	\$0	\$106,937	\$142,839	\$63,422	\$128,332	\$171,416	\$76,111
13	1.368	0.415	2019	\$0	\$0	\$0	\$106,937	\$146,267	\$60,695	\$128,332	\$175,530	\$72,839
14	1.401	0.388	2020	\$0	\$0	\$0	\$234,667	\$328,677	\$127,467	\$173,409	\$242,878	\$94,192
15	1.434	0.362	2021	\$0	\$0	\$0	\$106,937	\$153,372	\$55,589	\$128,332	\$184,057	\$66,711
16	1.469	0.339	2022	\$0	\$0	\$0	\$106,937	\$157,053	\$53,199	\$128,332	\$188,474	\$63,843
17	1.504	0.317	2023	\$0	\$0	\$0	\$106,937	\$160,822	\$50,912	\$128,332	\$192,998	\$61,098
18	1.540	0.296	2024	\$0	\$0	\$0	\$106,937	\$164,682	\$48,723	\$128,332	\$197,630	\$58,471
19	1.577	0.277	2025	\$0	\$0	\$0	\$234,667	\$370,057	\$102,324	\$173,409	\$273,457	\$75,613
20	1.615	0.258	2026	\$0	\$0	\$0	\$106,937	\$172,681	\$44,624	\$128,332	\$207,230	\$53,552
21	1.654	0.242	2027	\$0	\$0	\$0	\$106,937	\$176,826	\$42,706	\$128,332	\$212,203	\$51,250
22	1.693	0.226	2028	\$0	\$0	\$0	\$106,937	\$181,069	\$40,870	\$128,332	\$217,296	\$49,047
23	1.734	0.211	2029	\$0	\$0	\$0	\$106,937	\$185,415	\$39,113	\$128,332	\$222,511	\$46,938
24	1.775	0.197	2030	\$0	\$0	\$0	\$234,667	\$416,648	\$82,141	\$173,409	\$307,885	\$60,698
25	1.818	0.184	2031	\$0	\$0	\$0	\$106,937	\$194,422	\$35,822	\$128,332	\$233,320	\$42,989

Discount Rate 0.070	PROJECT:	OU 3-14 Tank Farm	ALTERNATIVE:	#3b Institutional Controls, Monitoring, Source Removal and Containment (2035)
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					CAPITAL COST		ANNUAL OPERAT	ION AND MAINTEN	ANCE (O&M) COST		PERIODIC COST	
Year	Escalation Rate	Discount Rate	Year	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%
26	1.862	0.172	2032	\$0	\$0	\$0	\$106,937	\$199,088	\$34,282	\$128,332	\$238,920	\$41,141
27	1.906	0.161	2033	\$0	\$0	\$0	\$106,937	\$203,866	\$32,808	\$128,332	\$244,654	\$39,372
28	1.952	0.150	2034	\$0	\$0	\$0	\$106,937	\$208,759	\$31,398	\$128,332	\$250,525	\$37,680
29	1.999	0.141	2035	\$28,047,011	\$58,789,956	\$7,217,820	\$234,667	\$469,103	\$65,939	\$173,409	\$346,648	\$48,726
30	2.047	0.131	2036	\$0	\$0	\$0	\$106,937	\$218,899	\$28,756	\$128,332	\$262,695	\$34,509
31	2.096	0.123	2037	\$0	\$0	\$0	\$106,937	\$224,153	\$27,520	\$128,332	\$269,000	\$33,026
32	2.146	0.115	2038	\$0	\$0	\$0	\$106,937	\$229,533	\$26,337	\$128,332	\$275,456	\$31,606
33	2.198	0.107	2039	\$0	\$0	\$0	\$106,937	\$235,041	\$25,205	\$128,332	\$282,066	\$30,247
34	2.251	0.100	2040	\$0	\$0	\$0	\$234,667	\$528,164	\$52,932	\$173,409	\$390,291	\$39,115
35	2.305	0.094	2041	\$0	\$0	\$0	\$106,937	\$246,459	\$23,084	\$128,332	\$295,768	\$27,703
36	2.360	0.088	2042	\$0	\$0	\$0	\$106,937	\$252,374	\$22,092	\$128,332	\$302,867	\$26,512
37	2.417	0.082	2043	\$0	\$0	\$0	\$106,937	\$258,431	\$21,142	\$128,332	\$310,135	\$25,372
38	2.475	0.076	2044	\$0	\$0	\$0	\$106,937	\$264,633	\$20,233	\$128,332	\$317,579	\$24,281
39	2.534	0.071	2045	\$0	\$0	\$0	\$234,667	\$594,659	\$42,491	\$173,409	\$439,428	\$31,399
40	2.595	0.067	2046	\$0	\$0	\$0	\$106,937	\$277,488	\$18,531	\$128,332	\$333,005	\$22,238
41	2.657	0.062	2047	\$0	\$0	\$0	\$106,937	\$284,148	\$17,734	\$128,332	\$340,997	\$21,282
42	2.721	0.058	2048	\$0	\$0	\$0	\$106,937	\$290,967	\$16,972	\$128,332	\$349,181	\$20,367
43	2.786	0.055	2049	\$0	\$0	\$0	\$106,937	\$297,950	\$16,242	\$128,332	\$357,562	\$19,492
44	2.853	0.051	2050	\$0	\$0	\$0	\$234,667	\$669,527	\$34,110	\$173,409	\$494,752	\$25,206
45	2.922	0.048	2051	\$0	\$0	\$0	\$106,937	\$312,424	\$14,876	\$128,332	\$374,931	\$17,852
46	2.992	0.044	2052	\$0	\$0	\$0	\$106,937	\$319,922	\$14,236	\$128,332	\$383,929	\$17,084
47	3.063	0.042	2053	\$0	\$0	\$0	\$106,937	\$327,600	\$13,624	\$128,332	\$393,143	\$16,350
48	3.137	0.039	2054	\$0	\$0	\$0	\$106,937	\$335,462	\$13,038	\$128,332	\$402,579	\$15,647
49	3.212	0.036	2055	\$0	\$0	\$0	\$234,667	\$753,820	\$27,382	\$173,409	\$557,041	\$20,234
50	3.289	0.034	2056	\$0	\$0	\$0	\$106,937	\$351,758	\$11,941	\$128,332	\$422,134	\$14,331
51	3.368	0.032	2057	\$0	\$0	\$0	\$106,937	\$360,200	\$11,428	\$128,332	\$432,266	\$13,714
52	3.449	0.030	2058	\$0	\$0	\$0	\$106,937	\$368,845	\$10,937	\$128,332	\$442,640	\$13,125
53	3.532	0.028	2059	\$0	\$0	\$0	\$106,937	\$377,697	\$10,467	\$128,332	\$453,263	\$12,561

Discount Rate 0.070 FROJECT: OU 3-14 Tank Farm ALTERNATIVE: #30 Histitutional Controls, Monitoring, Source Removal and Contaminent (20	Discount Rate 0.070	PROJECT:	OU 3-14 Tank Farm	ALTERNATIVE:	#3b Institutional Controls, Monitoring, Source Removal and Containment (20	35)
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					CAPITAL COST		ANNUAL OPERAT	TON AND MAINTEN	IANCE (O&M) COST		PERIODIC COST	
Year	Escalation Rate	Discount Rate	Year	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%
54	3.617	0.026	2060	\$0	\$0	\$0	\$234,667	\$848,726	\$21,981	\$173,409	\$627,173	\$16,243
55	3.704	0.024	2061	\$0	\$0	\$0	\$106,937	\$396,044	\$9,586	\$128,332	\$475,281	\$11,504
56	3.792	0.023	2062	\$0	\$0	\$0	\$106,937	\$405,549	\$9,174	\$128,332	\$486,688	\$11,009
57	3.883	0.021	2063	\$0	\$0	\$0	\$106,937	\$415,282	\$8,779	\$128,332	\$498,368	\$10,536
58	3.977	0.020	2064	\$0	\$0	\$0	\$106,937	\$425,249	\$8,402	\$128,332	\$510,329	\$10,083
59	4.072	0.018	2065	\$0	\$0	\$0	\$234,667	\$955,581	\$17,645	\$173,409	\$706,134	\$13,039
60	4.170	0.017	2066	\$0	\$0	\$0	\$106,937	\$445,906	\$7,695	\$128,332	\$535,119	\$9,235
61	4.270	0.016	2067	\$0	\$0	\$0	\$106,937	\$456,608	\$7,364	\$128,332	\$547,962	\$8,838
62	4.372	0.015	2068	\$0	\$0	\$0	\$106,937	\$467,566	\$7,048	\$128,332	\$561,113	\$8,458
63	4.477	0.014	2069	\$0	\$0	\$0	\$106,937	\$478,788	\$6,745	\$128,332	\$574,579	\$8,094
64	4.585	0.013	2070	\$0	\$0	\$0	\$234,667	\$1,075,888	\$14,165	\$173,409	\$795,036	\$10,467
65	4.695	0.012	2071	\$0	\$0	\$0	\$106,937	\$502,045	\$6,177	\$128,332	\$602,490	\$7,413
66	4.807	0.011	2072	\$0	\$0	\$0	\$106,937	\$514,095	\$5,912	\$128,332	\$616,950	\$7,094
67	4.923	0.011	2073	\$0	\$0	\$0	\$106,937	\$526,433	\$5,658	\$128,332	\$631,757	\$6,789
68	5.041	0.010	2074	\$0	\$0	\$0	\$106,937	\$539,067	\$5,414	\$128,332	\$646,919	\$6,498
69	5.162	0.009	2075	\$0	\$0	\$0	\$234,667	\$1,211,342	\$11,371	\$173,409	\$895,131	\$8,402
70	5.286	0.009	2076	\$0	\$0	\$0	\$106,937	\$565,253	\$4,959	\$128,332	\$678,344	\$5,951
71	5.413	0.008	2077	\$0	\$0	\$0	\$106,937	\$578,819	\$4,746	\$128,332	\$694,624	\$5,695
72	5.543	0.008	2078	\$0	\$0	\$0	\$106,937	\$592,711	\$4,542	\$128,332	\$711,295	\$5,450
73	5.676	0.007	2079	\$0	\$0	\$0	\$106,937	\$606,936	\$4,346	\$128,332	\$728,366	\$5,216
74	5.812	0.007	2080	\$0	\$0	\$0	\$234,667	\$1,363,850	\$9,128	\$173,409	\$1,007,828	\$6,745
75	5.951	0.006	2081	\$0	\$0	\$0	\$106,937	\$636,418	\$3,981	\$128,332	\$763,747	\$4,777
76	6.094	0.006	2082	\$0	\$0	\$0	\$106,937	\$651,692	\$3,810	\$128,332	\$782,077	\$4,572
77	6.240	0.005	2083	\$0	\$0	\$0	\$106,937	\$667,333	\$3,646	\$128,332	\$800,847	\$4,375
78	6.390	0.005	2084	\$0	\$0	\$0	\$106,937	\$683,349	\$3,489	\$128,332	\$820,067	\$4,187
79	6.544	0.005	2085	\$0	\$0	\$0	\$234,667	\$1,535,559	\$7,327	\$173,409	\$1,134,713	\$5,415
80	6.701	0.004	2086	\$0	\$0	\$0	\$106,937	\$716,543	\$3,196	\$128,332	\$859,903	\$3,835
81	6.861	0.004	2087	\$0	\$0	\$0	\$106,937	\$733,740	\$3,058	\$128,332	\$880,541	\$3,670

Discount Rate 0.070	PROJECT:	OU 3-14 Tank Farm	ALTERNATIVE:	#3b Institutional Controls, Monitoring, Source Removal and Containment (2035)

					CAPITAL COST		ANNUAL OPERAT	ION AND MAINTEN	ANCE (O&M) COST		PERIODIC COST	
Year	Escalation Rate	Discount Rate	Year	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%
82	7.026	0.004	2088	\$0	\$0	\$0	\$106,937	\$751,350	\$2,927	\$128,332	\$901,673	\$3,512
83	7.195	0.004	2089	\$0	\$0	\$0	\$106,937	\$769,382	\$2,801	\$128,332	\$923,314	\$3,361
84	7.367	0.003	2090	\$0	\$0	\$0	\$234,667	\$1,728,886	\$5,882	\$173,409	\$1,277,573	\$4,347
85	7.544	0.003	2091	\$0	\$0	\$0	\$106,937	\$806,756	\$2,565	\$128,332	\$968,165	\$3,078
86	7.725	0.003	2092	\$0	\$0	\$0	\$106,937	\$826,118	\$2,455	\$128,332	\$991,400	\$2,946
87	7.911	0.003	2093	\$0	\$0	\$0	\$106,937	\$845,945	\$2,349	\$128,332	\$1,015,194	\$2,819
88	8.101	0.003	2094	\$0	\$0	\$0	\$106,937	\$866,248	\$2,248	\$128,332	\$1,039,559	\$2,698
89	8.295	0.002	2095	\$0	\$0	\$0	\$234,667	\$1,946,552	\$4,722	\$173,409	\$1,438,420	\$3,489
90	8.494	0.002	2096	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
91	8.698	0.002	2097	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
92	8.907	0.002	2098	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
93	9.120	0.002	2099	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
94	9.339	0.002	2100	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
95	9.563	0.002	2101	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
96	9.793	0.002	2102	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
97	10.028	0.001	2103	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
98	10.269	0.001	2104	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
99	10.515	0.001	2105	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
100	10.767	0.001	2106	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
101	11.026	0.001	2107		\$0	\$0			\$0			\$0
102	11.291	0.001	2108									
103	11.561	0.001	2109									
104	11.839	0.001	2110									
105	12.123	0.001	2111									
106	12.414	0.001	2112									
107	12.712	0.001	2113									
108	13.017	0.001	2114									
109	13.329	0.001	2115									

	Discount Rate	0.070	PROJECT:	OU 3-14 Tank Farm			ALTERNATIVE:	#3b Institutional Co	ntrols, Monitoring, Sourc	ee Removal and Conta	inment (2035)	
							LIFE CYCLE COST ANALYSIS					
					CAPITAL COST		ANNUAL OPERAT	ΓΙΟΝ AND MAINTEN	ANCE (O&M) COST		PERIODIC COST	
Year	Escalation Rate	Discount Rate	Year	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%
110	13.649	0.001	2116									
111	13.977	0.001	2117									
112	14.312	0.001	2118									
113	14.656	0.000	2119									
114	15.008	0.000	2120									
115	15.368	0.000	2121									
116	15.737	0.000	2122									
117	16.114	0.000	2123									
			SUBTOTALS	\$37,396,015	\$69,621,315	\$14,435,212	\$11,174,911	\$40,925,356	\$2,311,922	\$11,462,942	\$42,027,239	\$2,332,187

Escalation rates were taken from "http://oecm.energy.gov/Portals/2/2004Rates.pdf," Office of Engineering and Construction Management, US Department of Energy (DOE).

60,033,868

152,573,910

Discount rates were taken from "A Guide to Developing and Documenting Cost Estimates During the Feasibility Study," US Army Corps of Engineers (USACE)/US Environmental Protection Agency (EPA).

19,079,321

These numbers do not include contingency. For contingency, see "Summary Cost Estimate Sheet"

TOTALS

Discount Rate 0.070	PROJECT:	OU 3-14 Tank Farm	ALTERNATIVE:	#4a Institutional Controls, Monitoring, Source Treatment and Containment (2012)

							ANNUAL OPERATION AND MAINTENANCE (O&M) COST						
					CAPITAL COST		ANNUAL OPERAT	ION AND MAINTEN	ANCE (O&M) COST		PERIODIC COST		
Year	Escalation Rate	Discount Rate	Year	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	
			2004										
			2005										
0	1.000	1.000	2006	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
1	1.027	0.935	2007	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
2	1.054	0.873	2008	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3	1.079	0.816	2009	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
4	1.105	0.763	2010	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
5	1.131	0.713	2011	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
6	1.159	0.666	2012	\$9,710,996	\$11,250,748	\$7,496,848	\$0	\$0	\$0	\$0	\$0	\$0	
7	1.186	0.623	2013	\$0	\$0	\$0	\$234,667	\$278,400	\$173,374	\$173,409	\$205,726	\$128,116	
8	1.215	0.582	2014	\$0	\$0	\$0	\$106,937	\$129,911	\$75,609	\$128,332	\$155,902	\$90,737	
9	1.244	0.544	2015	\$0	\$0	\$0	\$234,667	\$291,924	\$158,787	\$173,409	\$215,719	\$117,337	
10	1.274	0.508	2016	\$0	\$0	\$0	\$106,937	\$136,221	\$69,248	\$128,332	\$163,475	\$83,103	
11	1.304	0.475	2017	\$0	\$0	\$0	\$106,937	\$139,491	\$66,271	\$128,332	\$167,399	\$79,530	
12	1.336	0.444	2018	\$0	\$0	\$0	\$106,937	\$142,839	\$63,422	\$128,332	\$171,416	\$76,111	
13	1.368	0.415	2019	\$0	\$0	\$0	\$106,937	\$146,267	\$60,695	\$128,332	\$175,530	\$72,839	
14	1.401	0.388	2020	\$0	\$0	\$0	\$234,667	\$328,677	\$127,467	\$173,409	\$242,878	\$94,192	
15	1.434	0.362	2021	\$0	\$0	\$0	\$106,937	\$153,372	\$55,589	\$128,332	\$184,057	\$66,711	
16	1.469	0.339	2022	\$0	\$0	\$0	\$106,937	\$157,053	\$53,199	\$128,332	\$188,474	\$63,843	
17	1.504	0.317	2023	\$0	\$0	\$0	\$106,937	\$160,822	\$50,912	\$128,332	\$192,998	\$61,098	
18	1.540	0.296	2024	\$0	\$0	\$0	\$106,937	\$164,682	\$48,723	\$128,332	\$197,630	\$58,471	
19	1.577	0.277	2025	\$0	\$0	\$0	\$234,667	\$370,057	\$102,324	\$173,409	\$273,457	\$75,613	
20	1.615	0.258	2026	\$0	\$0	\$0	\$106,937	\$172,681	\$44,624	\$128,332	\$207,230	\$53,552	
21	1.654	0.242	2027	\$0	\$0	\$0	\$106,937	\$176,826	\$42,706	\$128,332	\$212,203	\$51,250	
22	1.693	0.226	2028	\$0	\$0	\$0	\$106,937	\$181,069	\$40,870	\$128,332	\$217,296	\$49,047	
23	1.734	0.211	2029	\$0	\$0	\$0	\$106,937	\$185,415	\$39,113	\$128,332	\$222,511	\$46,938	
24	1.775	0.197	2030	\$0	\$0	\$0	\$234,667	\$416,648	\$82,141	\$173,409	\$307,885	\$60,698	
25	1.818	0.184	2031	\$0	\$0	\$0	\$106,937	\$194,422	\$35,822	\$128,332	\$233,320	\$42,989	

Discount Rate 0.070	PROJECT:	OU 3-14 Tank Farm	ALTERNATIVE:	#4a Institutional Controls, Monitoring, Source Treatment and Containment (2012)

					CAPITAL COST		ANNUAL OPERATION AND MAINTENANCE (O&M) COST				PERIODIC COST	
Year	Escalation Rate	Discount Rate	Year	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%
26	1.862	0.172	2032	\$0	\$0	\$0	\$106,937	\$199,088	\$34,282	\$128,332	\$238,920	\$41,141
27	1.906	0.161	2033	\$0	\$0	\$0	\$106,937	\$203,866	\$32,808	\$128,332	\$244,654	\$39,372
28	1.952	0.150	2034	\$0	\$0	\$0	\$106,937	\$208,759	\$31,398	\$128,332	\$250,525	\$37,680
29	1.999	0.141	2035	\$3,236,999	\$6,785,144	\$833,032	\$234,667	\$469,103	\$65,939	\$173,409	\$346,648	\$48,726
30	2.047	0.131	2036	\$0	\$0	\$0	\$106,937	\$218,899	\$28,756	\$128,332	\$262,695	\$34,509
31	2.096	0.123	2037	\$0	\$0	\$0	\$106,937	\$224,153	\$27,520	\$128,332	\$269,000	\$33,026
32	2.146	0.115	2038	\$0	\$0	\$0	\$106,937	\$229,533	\$26,337	\$128,332	\$275,456	\$31,606
33	2.198	0.107	2039	\$0	\$0	\$0	\$106,937	\$235,041	\$25,205	\$128,332	\$282,066	\$30,247
34	2.251	0.100	2040	\$0	\$0	\$0	\$234,667	\$528,164	\$52,932	\$173,409	\$390,291	\$39,115
35	2.305	0.094	2041	\$0	\$0	\$0	\$106,937	\$246,459	\$23,084	\$128,332	\$295,768	\$27,703
36	2.360	0.088	2042	\$0	\$0	\$0	\$106,937	\$252,374	\$22,092	\$128,332	\$302,867	\$26,512
37	2.417	0.082	2043	\$0	\$0	\$0	\$106,937	\$258,431	\$21,142	\$128,332	\$310,135	\$25,372
38	2.475	0.076	2044	\$0	\$0	\$0	\$106,937	\$264,633	\$20,233	\$128,332	\$317,579	\$24,281
39	2.534	0.071	2045	\$0	\$0	\$0	\$234,667	\$594,659	\$42,491	\$173,409	\$439,428	\$31,399
40	2.595	0.067	2046	\$0	\$0	\$0	\$106,937	\$277,488	\$18,531	\$128,332	\$333,005	\$22,238
41	2.657	0.062	2047	\$0	\$0	\$0	\$106,937	\$284,148	\$17,734	\$128,332	\$340,997	\$21,282
42	2.721	0.058	2048	\$0	\$0	\$0	\$106,937	\$290,967	\$16,972	\$128,332	\$349,181	\$20,367
43	2.786	0.055	2049	\$0	\$0	\$0	\$106,937	\$297,950	\$16,242	\$128,332	\$357,562	\$19,492
44	2.853	0.051	2050	\$0	\$0	\$0	\$234,667	\$669,527	\$34,110	\$173,409	\$494,752	\$25,206
45	2.922	0.048	2051	\$0	\$0	\$0	\$106,937	\$312,424	\$14,876	\$128,332	\$374,931	\$17,852
46	2.992	0.044	2052	\$0	\$0	\$0	\$106,937	\$319,922	\$14,236	\$128,332	\$383,929	\$17,084
47	3.063	0.042	2053	\$0	\$0	\$0	\$106,937	\$327,600	\$13,624	\$128,332	\$393,143	\$16,350
48	3.137	0.039	2054	\$0	\$0	\$0	\$106,937	\$335,462	\$13,038	\$128,332	\$402,579	\$15,647
49	3.212	0.036	2055	\$0	\$0	\$0	\$234,667	\$753,820	\$27,382	\$173,409	\$557,041	\$20,234
50	3.289	0.034	2056	\$0	\$0	\$0	\$106,937	\$351,758	\$11,941	\$128,332	\$422,134	\$14,331
51	3.368	0.032	2057	\$0	\$0	\$0	\$106,937	\$360,200	\$11,428	\$128,332	\$432,266	\$13,714
52	3.449	0.030	2058	\$0	\$0	\$0	\$106,937	\$368,845	\$10,937	\$128,332	\$442,640	\$13,125
53	3.532	0.028	2059	\$0	\$0	\$0	\$106,937	\$377,697	\$10,467	\$128,332	\$453,263	\$12,561

Discount Rate 0.070	PROJECT:	OU 3-14 Tank Farm	ALTERNATIVE:	#4a Institutional Controls, Monitoring, Source Treatment and Containment (2012)
Discoult Rate 0.070	I KOJECI.	OU 3-14 Tank Farm	ALIEMIATIVE.	π-a institutional Controls, Womtoring, Source Treatment and Contaminent (2012)

					CAPITAL COST			ANNUAL OPERATION AND MAINTENANCE (O&M) COST			PERIODIC COST		
Year	Escalation Rate	Discount Rate	Year	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	
54	3.617	0.026	2060	\$0	\$0	\$0	\$234,667	\$848,726	\$21,981	\$173,409	\$627,173	\$16,243	
55	3.704	0.024	2061	0	\$0	\$0	\$106,937	\$396,044	\$9,586	\$128,332	\$475,281	\$11,504	
56	3.792	0.023	2062	\$0	\$0	\$0	\$106,937	\$405,549	\$9,174	\$128,332	\$486,688	\$11,009	
57	3.883	0.021	2063	\$0	\$0	\$0	\$106,937	\$415,282	\$8,779	\$128,332	\$498,368	\$10,536	
58	3.977	0.020	2064	\$0	\$0	\$0	\$106,937	\$425,249	\$8,402	\$128,332	\$510,329	\$10,083	
59	4.072	0.018	2065	\$0	\$0	\$0	\$234,667	\$955,581	\$17,645	\$173,409	\$706,134	\$13,039	
60	4.170	0.017	2066	\$0	\$0	\$0	\$106,937	\$445,906	\$7,695	\$128,332	\$535,119	\$9,235	
61	4.270	0.016	2067	\$0	\$0	\$0	\$106,937	\$456,608	\$7,364	\$128,332	\$547,962	\$8,838	
62	4.372	0.015	2068	\$0	\$0	\$0	\$106,937	\$467,566	\$7,048	\$128,332	\$561,113	\$8,458	
63	4.477	0.014	2069	\$0	\$0	\$0	\$106,937	\$478,788	\$6,745	\$128,332	\$574,579	\$8,094	
64	4.585	0.013	2070	\$0	\$0	\$0	\$234,667	\$1,075,888	\$14,165	\$173,409	\$795,036	\$10,467	
65	4.695	0.012	2071	\$0	\$0	\$0	\$106,937	\$502,045	\$6,177	\$128,332	\$602,490	\$7,413	
66	4.807	0.011	2072	\$0	\$0	\$0	\$106,937	\$514,095	\$5,912	\$128,332	\$616,950	\$7,094	
67	4.923	0.011	2073	\$0	\$0	\$0	\$106,937	\$526,433	\$5,658	\$128,332	\$631,757	\$6,789	
68	5.041	0.010	2074	\$0	\$0	\$0	\$106,937	\$539,067	\$5,414	\$128,332	\$646,919	\$6,498	
69	5.162	0.009	2075	\$0	\$0	\$0	\$234,667	\$1,211,342	\$11,371	\$173,409	\$895,131	\$8,402	
70	5.286	0.009	2076	\$0	\$0	\$0	\$106,937	\$565,253	\$4,959	\$128,332	\$678,344	\$5,951	
71	5.413	0.008	2077	\$0	\$0	\$0	\$106,937	\$578,819	\$4,746	\$128,332	\$694,624	\$5,695	
72	5.543	0.008	2078	\$0	\$0	\$0	\$106,937	\$592,711	\$4,542	\$128,332	\$711,295	\$5,450	
73	5.676	0.007	2079	\$0	\$0	\$0	\$106,937	\$606,936	\$4,346	\$128,332	\$728,366	\$5,216	
74	5.812	0.007	2080	\$0	\$0	\$0	\$234,667	\$1,363,850	\$9,128	\$173,409	\$1,007,828	\$6,745	
75	5.951	0.006	2081	\$0	\$0	\$0	\$106,937	\$636,418	\$3,981	\$128,332	\$763,747	\$4,777	
76	6.094	0.006	2082	\$0	\$0	\$0	\$106,937	\$651,692	\$3,810	\$128,332	\$782,077	\$4,572	
77	6.240	0.005	2083	\$0	\$0	\$0	\$106,937	\$667,333	\$3,646	\$128,332	\$800,847	\$4,375	
78	6.390	0.005	2084	\$0	\$0	\$0	\$106,937	\$683,349	\$3,489	\$128,332	\$820,067	\$4,187	
79	6.544	0.005	2085	\$0	\$0	\$0	\$234,667	\$1,535,559	\$7,327	\$173,409	\$1,134,713	\$5,415	
80	6.701	0.004	2086	\$0	\$0	\$0	\$106,937	\$716,543	\$3,196	\$128,332	\$859,903	\$3,835	
81	6.861	0.004	2087	\$0	\$0	\$0	\$106,937	\$733,740	\$3,058	\$128,332	\$880,541	\$3,670	

Discount Rate 0.070	PROJECT:	OU 3-14 Tank Farm	ALTERNATIVE:	#4a Institutional Controls, Monitoring, Source Treatment and Containment (2012)

				CAPITAL COST			ANNUAL OPERATION AND MAINTENANCE (O&M) COST			PERIODIC COST			
Year	Escalation Rate	Discount Rate	Year	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	
82	7.026	0.004	2088	\$0	\$0	\$0	\$106,937	\$751,350	\$2,927	\$128,332	\$901,673	\$3,512	
83	7.195	0.004	2089	\$0	\$0	\$0	\$106,937	\$769,382	\$2,801	\$128,332	\$923,314	\$3,361	
84	7.367	0.003	2090	\$0	\$0	\$0	\$234,667	\$1,728,886	\$5,882	\$173,409	\$1,277,573	\$4,347	
85	7.544	0.003	2091	\$0	\$0	\$0	\$106,937	\$806,756	\$2,565	\$128,332	\$968,165	\$3,078	
86	7.725	0.003	2092	\$0	\$0	\$0	\$106,937	\$826,118	\$2,455	\$128,332	\$991,400	\$2,946	
87	7.911	0.003	2093	\$0	\$0	\$0	\$106,937	\$845,945	\$2,349	\$128,332	\$1,015,194	\$2,819	
88	8.101	0.003	2094	\$0	\$0	\$0	\$106,937	\$866,248	\$2,248	\$128,332	\$1,039,559	\$2,698	
89	8.295	0.002	2095	\$0	\$0	\$0	\$234,667	\$1,946,552	\$4,722	\$173,409	\$1,438,420	\$3,489	
90	8.494	0.002	2096	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
91	8.698	0.002	2097	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
92	8.907	0.002	2098	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
93	9.120	0.002	2099	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
94	9.339	0.002	2100	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
95	9.563	0.002	2101	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
96	9.793	0.002	2102	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
97	10.028	0.001	2103	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
98	10.269	0.001	2104	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
99	10.515	0.001	2105	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
100	10.767	0.001	2106	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
101	11.026	0.001	2107		\$0	\$0			\$0			\$0	
102	11.291	0.001	2108										
103	11.561	0.001	2109										
104	11.839	0.001	2110										
105	12.123	0.001	2111										
106	12.414	0.001	2112										
107	12.712	0.001	2113										
108	13.017	0.001	2114										
109	13.329	0.001	2115										

Discount Rate 0.070	PROJECT:	OU 3-14 Tank Farm	ALTERNATIVE:	#4a Institutional Controls, Monitoring, Source Treatment and Containment (2012)

					CAPITAL COST		ANNUAL OPERAT	ANNUAL OPERATION AND MAINTENANCE (O&M) COST			PERIODIC COST		
Year	Escalation Rate	Discount Rate	Year	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	
110	13.649	0.001	2116										
111	13.977	0.001	2117										
112	14.312	0.001	2118										
113	14.656	0.000	2119										
114	15.008	0.000	2120										
115	15.368	0.000	2121										
116	15.737	0.000	2122										
117	16.114	0.000	2123										
118	16.501	0.000	SUBTOTALS	\$12,947,994	\$18,035,891	\$8,329,881	<u>\$11,174,911</u>	\$40,925,356	\$2,311,922	\$11,462,942	\$42,027,239	\$2,332,187	
119	16.897	0.000	TOTALS	35,585,847	100,988,486	12,973,990							

Escalation rates were taken from "http://oecm.energy.gov/Portals/2/2004Rates.pdf," Office of Engineering and Construction Management, US Department of Energy (DOE).

Discount rates were taken from "A Guide to Developing and Documenting Cost Estimates During the Feasibility Study," US Army Corps of Engineers (USACE)/US Environmental Protection Agency (EPA).

These numbers do not include contingency. For contingency, see "Summary Cost Estimate Sheet"

	Discount Rate 0.070	PROJECT:	OU 3-14 Tank Farm	ALTERNATIVE:	#4b Institutional Controls, Monitoring, Source Treatment and Containment (2035)
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					CAPITAL COST		ANNUAL OPERAT	ANNUAL OPERATION AND MAINTENANCE (O&M) COST			PERIODIC COST		
Year	Escalation Rate	Discount Rate	Year	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	
			2004			, 33337							
			2005										
0	1.000	1.000	2006	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
1	1.027	0.935	2007	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
2	1.054	0.873	2008	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3	1.079	0.816	2009	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
4	1.105	0.763	2010	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
5	1.131	0.713	2011	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
6	1.159	0.666	2012	\$3,040,925	\$3,523,086	\$2,347,581	\$0	\$0	\$0	\$0	\$0	\$0	
7	1.186	0.623	2013	\$0	\$0	\$0	\$234,667	\$278,400	\$173,374	\$173,409	\$205,726	\$128,116	
8	1.215	0.582	2014	\$0	\$0	\$0	\$106,937	\$129,911	\$75,609	\$128,332	\$155,902	\$90,737	
9	1.244	0.544	2015	\$0	\$0	\$0	\$234,667	\$291,924	\$158,787	\$173,409	\$215,719	\$117,337	
10	1.274	0.508	2016	\$0	\$0	\$0	\$106,937	\$136,221	\$69,248	\$128,332	\$163,475	\$83,103	
11	1.304	0.475	2017	\$0	\$0	\$0	\$106,937	\$139,491	\$66,271	\$128,332	\$167,399	\$79,530	
12	1.336	0.444	2018	\$0	\$0	\$0	\$106,937	\$142,839	\$63,422	\$128,332	\$171,416	\$76,111	
13	1.368	0.415	2019	\$0	\$0	\$0	\$106,937	\$146,267	\$60,695	\$128,332	\$175,530	\$72,839	
14	1.401	0.388	2020	\$0	\$0	\$0	\$234,667	\$328,677	\$127,467	\$173,409	\$242,878	\$94,192	
15	1.434	0.362	2021	\$0	\$0	\$0	\$106,937	\$153,372	\$55,589	\$128,332	\$184,057	\$66,711	
16	1.469	0.339	2022	\$0	\$0	\$0	\$106,937	\$157,053	\$53,199	\$128,332	\$188,474	\$63,843	
17	1.504	0.317	2023	\$0	\$0	\$0	\$106,937	\$160,822	\$50,912	\$128,332	\$192,998	\$61,098	
18	1.540	0.296	2024	\$0	\$0	\$0	\$106,937	\$164,682	\$48,723	\$128,332	\$197,630	\$58,471	
19	1.577	0.277	2025	\$0	\$0	\$0	\$234,667	\$370,057	\$102,324	\$173,409	\$273,457	\$75,613	
20	1.615	0.258	2026	\$0	\$0	\$0	\$106,937	\$172,681	\$44,624	\$128,332	\$207,230	\$53,552	
21	1.654	0.242	2027	\$0	\$0	\$0	\$106,937	\$176,826	\$42,706	\$128,332	\$212,203	\$51,250	
22	1.693	0.226	2028	\$0	\$0	\$0	\$106,937	\$181,069	\$40,870	\$128,332	\$217,296	\$49,047	
23	1.734	0.211	2029	\$0	\$0	\$0	\$106,937	\$185,415	\$39,113	\$128,332	\$222,511	\$46,938	
24	1.775	0.197	2030	\$0	\$0	\$0	\$234,667	\$416,648	\$82,141	\$173,409	\$307,885	\$60,698	
25	1.818	0.184	2031	\$0	\$0	\$0	\$106,937	\$194,422	\$35,822	\$128,332	\$233,320	\$42,989	

Discount Rate 0.070 PROJECT: OU 5-14 Tank Farm ALTERNATIVE: #40 Institutional Controls, Monitoring, Source Treatment and Containment (2053)	Discount Rate 0.070	PROJECT: OU 3-14 Tank Farm	ount Rate 0.070	ALTERNATIVE:	#4b Institutional Controls, Monitoring, Source Treatment and Containment (2035)
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					CAPITAL COST		ANNUAL OPERAT	ION AND MAINTEN	ANCE (O&M) COST		PERIODIC COST		
Year	Escalation Rate	Discount Rate	Year	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	
26	1.862	0.172	2032	\$0	\$0	\$0	\$106,937	\$199,088	\$34,282	\$128,332	\$238,920	\$41,141	
27	1.906	0.161	2033	\$0	\$0	\$0	\$106,937	\$203,866	\$32,808	\$128,332	\$244,654	\$39,372	
28	1.952	0.150	2034	\$0	\$0	\$0	\$106,937	\$208,759	\$31,398	\$128,332	\$250,525	\$37,680	
29	1.999	0.141	2035	\$9,122,774	\$19,122,447	\$2,347,720	\$234,667	\$469,103	\$65,939	\$173,409	\$346,648	\$48,726	
30	2.047	0.131	2036	\$0	\$0	\$0	\$106,937	\$218,899	\$28,756	\$128,332	\$262,695	\$34,509	
31	2.096	0.123	2037	\$0	\$0	\$0	\$106,937	\$224,153	\$27,520	\$128,332	\$269,000	\$33,026	
32	2.146	0.115	2038	\$0	\$0	\$0	\$106,937	\$229,533	\$26,337	\$128,332	\$275,456	\$31,606	
33	2.198	0.107	2039	\$0	\$0	\$0	\$106,937	\$235,041	\$25,205	\$128,332	\$282,066	\$30,247	
34	2.251	0.100	2040	\$0	\$0	\$0	\$234,667	\$528,164	\$52,932	\$173,409	\$390,291	\$39,115	
35	2.305	0.094	2041	\$0	\$0	\$0	\$106,937	\$246,459	\$23,084	\$128,332	\$295,768	\$27,703	
36	2.360	0.088	2042	\$0	\$0	\$0	\$106,937	\$252,374	\$22,092	\$128,332	\$302,867	\$26,512	
37	2.417	0.082	2043	\$0	\$0	\$0	\$106,937	\$258,431	\$21,142	\$128,332	\$310,135	\$25,372	
38	2.475	0.076	2044	\$0	\$0	\$0	\$106,937	\$264,633	\$20,233	\$128,332	\$317,579	\$24,281	
39	2.534	0.071	2045	\$0	\$0	\$0	\$234,667	\$594,659	\$42,491	\$173,409	\$439,428	\$31,399	
40	2.595	0.067	2046	\$0	\$0	\$0	\$106,937	\$277,488	\$18,531	\$128,332	\$333,005	\$22,238	
41	2.657	0.062	2047	\$0	\$0	\$0	\$106,937	\$284,148	\$17,734	\$128,332	\$340,997	\$21,282	
42	2.721	0.058	2048	\$0	\$0	\$0	\$106,937	\$290,967	\$16,972	\$128,332	\$349,181	\$20,367	
43	2.786	0.055	2049	\$0	\$0	\$0	\$106,937	\$297,950	\$16,242	\$128,332	\$357,562	\$19,492	
44	2.853	0.051	2050	\$0	\$0	\$0	\$234,667	\$669,527	\$34,110	\$173,409	\$494,752	\$25,206	
45	2.922	0.048	2051	\$0	\$0	\$0	\$106,937	\$312,424	\$14,876	\$128,332	\$374,931	\$17,852	
46	2.992	0.044	2052	\$0	\$0	\$0	\$106,937	\$319,922	\$14,236	\$128,332	\$383,929	\$17,084	
47	3.063	0.042	2053	\$0	\$0	\$0	\$106,937	\$327,600	\$13,624	\$128,332	\$393,143	\$16,350	
48	3.137	0.039	2054	\$0	\$0	\$0	\$106,937	\$335,462	\$13,038	\$128,332	\$402,579	\$15,647	
49	3.212	0.036	2055	\$0	\$0	\$0	\$234,667	\$753,820	\$27,382	\$173,409	\$557,041	\$20,234	
50	3.289	0.034	2056	\$0	\$0	\$0	\$106,937	\$351,758	\$11,941	\$128,332	\$422,134	\$14,331	
51	3.368	0.032	2057	\$0	\$0	\$0	\$106,937	\$360,200	\$11,428	\$128,332	\$432,266	\$13,714	
52	3.449	0.030	2058	\$0	\$0	\$0	\$106,937	\$368,845	\$10,937	\$128,332	\$442,640	\$13,125	
53	3.532	0.028	2059	\$0	\$0	\$0	\$106,937	\$377,697	\$10,467	\$128,332	\$453,263	\$12,561	

Discount Rate 0.070 PROJECT: OU 5-14 Tank Farm ALTERNATIVE: #40 Institutional Controls, Monitoring, Source Treatment and Containment (2053)	Discount Rate 0.070	PROJECT: OU 3-14 Tank Farm	ount Rate 0.070	ALTERNATIVE:	#4b Institutional Controls, Monitoring, Source Treatment and Containment (2035)
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					CAPITAL COST		ANNUAL OPERAT	ION AND MAINTEN	ANCE (O&M) COST		PERIODIC COST		
Year	Escalation Rate	Discount Rate	Year	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	
54	3.617	0.026	2060	\$0	\$0	\$0	\$234,667	\$848,726	\$21,981	\$173,409	\$627,173	\$16,243	
55	3.704	0.024	2061	\$0	\$0	\$0	\$106,937	\$396,044	\$9,586	\$128,332	\$475,281	\$11,504	
56	3.792	0.023	2062	\$0	\$0	\$0	\$106,937	\$405,549	\$9,174	\$128,332	\$486,688	\$11,009	
57	3.883	0.021	2063	\$0	\$0	\$0	\$106,937	\$415,282	\$8,779	\$128,332	\$498,368	\$10,536	
58	3.977	0.020	2064	\$0	\$0	\$0	\$106,937	\$425,249	\$8,402	\$128,332	\$510,329	\$10,083	
59	4.072	0.018	2065	\$0	\$0	\$0	\$234,667	\$955,581	\$17,645	\$173,409	\$706,134	\$13,039	
60	4.170	0.017	2066	\$0	\$0	\$0	\$106,937	\$445,906	\$7,695	\$128,332	\$535,119	\$9,235	
61	4.270	0.016	2067	\$0	\$0	\$0	\$106,937	\$456,608	\$7,364	\$128,332	\$547,962	\$8,838	
62	4.372	0.015	2068	\$0	\$0	\$0	\$106,937	\$467,566	\$7,048	\$128,332	\$561,113	\$8,458	
63	4.477	0.014	2069	\$0	\$0	\$0	\$106,937	\$478,788	\$6,745	\$128,332	\$574,579	\$8,094	
64	4.585	0.013	2070	\$0	\$0	\$0	\$234,667	\$1,075,888	\$14,165	\$173,409	\$795,036	\$10,467	
65	4.695	0.012	2071	\$0	\$0	\$0	\$106,937	\$502,045	\$6,177	\$128,332	\$602,490	\$7,413	
66	4.807	0.011	2072	\$0	\$0	\$0	\$106,937	\$514,095	\$5,912	\$128,332	\$616,950	\$7,094	
67	4.923	0.011	2073	\$0	\$0	\$0	\$106,937	\$526,433	\$5,658	\$128,332	\$631,757	\$6,789	
68	5.041	0.010	2074	\$0	\$0	\$0	\$106,937	\$539,067	\$5,414	\$128,332	\$646,919	\$6,498	
69	5.162	0.009	2075	\$0	\$0	\$0	\$234,667	\$1,211,342	\$11,371	\$173,409	\$895,131	\$8,402	
70	5.286	0.009	2076	\$0	\$0	\$0	\$106,937	\$565,253	\$4,959	\$128,332	\$678,344	\$5,951	
71	5.413	0.008	2077	\$0	\$0	\$0	\$106,937	\$578,819	\$4,746	\$128,332	\$694,624	\$5,695	
72	5.543	0.008	2078	\$0	\$0	\$0	\$106,937	\$592,711	\$4,542	\$128,332	\$711,295	\$5,450	
73	5.676	0.007	2079	\$0	\$0	\$0	\$106,937	\$606,936	\$4,346	\$128,332	\$728,366	\$5,216	
74	5.812	0.007	2080	\$0	\$0	\$0	\$234,667	\$1,363,850	\$9,128	\$173,409	\$1,007,828	\$6,745	
75	5.951	0.006	2081	\$0	\$0	\$0	\$106,937	\$636,418	\$3,981	\$128,332	\$763,747	\$4,777	
76	6.094	0.006	2082	\$0	\$0	\$0	\$106,937	\$651,692	\$3,810	\$128,332	\$782,077	\$4,572	
77	6.240	0.005	2083	\$0	\$0	\$0	\$106,937	\$667,333	\$3,646	\$128,332	\$800,847	\$4,375	
78	6.390	0.005	2084	\$0	\$0	\$0	\$106,937	\$683,349	\$3,489	\$128,332	\$820,067	\$4,187	
79	6.544	0.005	2085	\$0	\$0	\$0	\$234,667	\$1,535,559	\$7,327	\$173,409	\$1,134,713	\$5,415	
80	6.701	0.004	2086	\$0	\$0	\$0	\$106,937	\$716,543	\$3,196	\$128,332	\$859,903	\$3,835	
81	6.861	0.004	2087	\$0	\$0	\$0	\$106,937	\$733,740	\$3,058	\$128,332	\$880,541	\$3,670	

Discount Rate 0.070	PROJECT:	OU 3-14 Tank Farm	ALTERNATIVE:	#4b Institutional Controls, Monitoring, Source Treatment and Containment (2035)

					CAPITAL COST		ANNUAL OPERATION AND MAINTENANCE (O&M) COST			PERIODIC COST			
Year	Escalation Rate	Discount Rate	Year	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	
82	7.026	0.004	2088	\$0	\$0	\$0	\$106,937	\$751,350	\$2,927	\$128,332	\$901,673	\$3,512	
83	7.195	0.004	2089	\$0	\$0	\$0	\$106,937	\$769,382	\$2,801	\$128,332	\$923,314	\$3,361	
84	7.367	0.003	2090	\$0	\$0	\$0	\$234,667	\$1,728,886	\$5,882	\$173,409	\$1,277,573	\$4,347	
85	7.544	0.003	2091	\$0	\$0	\$0	\$106,937	\$806,756	\$2,565	\$128,332	\$968,165	\$3,078	
86	7.725	0.003	2092	\$0	\$0	\$0	\$106,937	\$826,118	\$2,455	\$128,332	\$991,400	\$2,946	
87	7.911	0.003	2093	\$0	\$0	\$0	\$106,937	\$845,945	\$2,349	\$128,332	\$1,015,194	\$2,819	
88	8.101	0.003	2094	\$0	\$0	\$0	\$106,937	\$866,248	\$2,248	\$128,332	\$1,039,559	\$2,698	
89	8.295	0.002	2095	\$0	\$0	\$0	\$234,667	\$1,946,552	\$4,722	\$173,409	\$1,438,420	\$3,489	
90	8.494	0.002	2096	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
91	8.698	0.002	2097	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
92	8.907	0.002	2098	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
93	9.120	0.002	2099	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
94	9.339	0.002	2100	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
95	9.563	0.002	2101	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
96	9.793	0.002	2102	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
97	10.028	0.001	2103	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
98	10.269	0.001	2104	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
99	10.515	0.001	2105	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
100	10.767	0.001	2106	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
101	11.026	0.001	2107		\$0	\$0			\$0			\$0	
102	11.291	0.001	2108										
103	11.561	0.001	2109										
104	11.839	0.001	2110										
105	12.123	0.001	2111										
106	12.414	0.001	2112										
107	12.712	0.001	2113										
108	13.017	0.001	2114										
109	13.329	0.001	2115										

Discount Rate 0.070	PROJECT:	OU 3-14 Tank Farm	ALTERNATIVE:	#4b Institutional Controls, Monitoring, Source Treatment and Containment (2035)

					CAPITAL COST			ANNUAL OPERATION AND MAINTENANCE (O&M) COST			PERIODIC COST		
Year	Escalation Rate	Discount Rate	Year	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	
110	13.649	0.001	2116										
111	13.977	0.001	2117										
112	14.312	0.001	2118										
113	14.656	0.000	2119										
114	15.008	0.000	2120										
115	15.368	0.000	2121										
116	15.737	0.000	2122										
117	16.114	0.000	2123										
118	16.501	0.000	SUBTOTALS	<u>\$12,163,699</u>	<u>\$22,645,534</u>	\$4,695,302	<u>\$11,174,911</u>	<u>\$40,925,356</u>	\$2,311,922	\$11,462,942	\$42,027,239	<u>\$2,332,187</u>	
119	16.897	0.000	TOTALS	34,801,552	105,598,128	9,339,411							

Escalation rates were taken from "http://oecm.energy.gov/Portals/2/2004Rates.pdf," Office of Engineering and Construction Management, US Department of Energy (DOE).

Discount rates were taken from "A Guide to Developing and Documenting Cost Estimates During the Feasibility Study," US Army Corps of Engineers (USACE)/US Environmental Protection Agency (EPA).

These numbers do not include contingency. For contingency, see "Summary Cost Estimate Sheet"

Discount Rate 0.070	PROJECT:	OU 3-14 Tank Farm	ALTERNATIVE:	#5 Contingent SRPA Pump & Treat for Cleanup

					CAPITAL COST		ANNUAL OPERAT	ION AND MAINTENA	ANCE (O&M) COST		PERIODIC COST	
Year	Escalation Rate	Discount Rate	Year	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%
			2004									
			2005									
0	1.000	1.000	2006	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1	1.027	0.935	2007	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	1.054	0.873	2008	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3	1.079	0.816	2009	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
4	1.105	0.763	2010	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
5	1.131	0.713	2011	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6	1.159	0.666	2012	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	1.186	0.623	2013	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	1.215	0.582	2014	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	1.244	0.544	2015	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
10	1.274	0.508	2016	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
11	1.304	0.475	2017	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
12	1.336	0.444	2018	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
13	1.368	0.415	2019	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
14	1.401	0.388	2020	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
15	1.434	0.362	2021	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
16	1.469	0.339	2022	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
17	1.504	0.317	2023	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
18	1.540	0.296	2024	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
19	1.577	0.277	2025	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
20	1.615	0.258	2026	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
21	1.654	0.242	2027	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
22	1.693	0.226	2028	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
23	1.734	0.211	2029	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
24	1.775	0.197	2030	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
25	1.818	0.184	2031	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Discount Rate 0.070	PROJECT:	OU 3-14 Tank Farm	ALTERNATIVE:	#5 Contingent SRPA Pump & Treat for Cleanup

					CAPITAL COST			ANNUAL OPERATION AND MAINTENANCE (O&M) COST			PERIODIC COST	
Year	Escalation Rate	Discount Rate	Year	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%
26	1.862	0.172	2032	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
27	1.906	0.161	2033	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
28	1.952	0.150	2034	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
29	1.999	0.141	2035	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
30	2.047	0.131	2036	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
31	2.096	0.123	2037	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
32	2.146	0.115	2038	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
33	2.198	0.107	2039	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
34	2.251	0.100	2040	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
35	2.305	0.094	2041	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
36	2.360	0.088	2042	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
37	2.417	0.082	2043	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
38	2.475	0.076	2044	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
39	2.534	0.071	2045	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
40	2.595	0.067	2046	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
41	2.657	0.062	2047	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
42	2.721	0.058	2048	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
43	2.786	0.055	2049	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
44	2.853	0.051	2050	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
45	2.922	0.048	2051	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
46	2.992	0.044	2052	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
47	3.063	0.042	2053	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
48	3.137	0.039	2054	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
49	3.212	0.036	2055	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
50	3.289	0.034	2056	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
51	3.368	0.032	2057	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
52	3.449	0.030	2058	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
53	3.532	0.028	2059	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Discount Rate 0.070	PROJECT:	OU 3-14 Tank Farm	ALTERNATIVE:	#5 Contingent SRPA Pump & Treat for Cleanup

					CAPITAL COST		ANNUAL OPERAT	ION AND MAINTENA	ANCE (O&M) COST	PERIODIC COST			
Year	Escalation Rate	Discount Rate	Year	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	
54	3.617	0.026	2060	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
55	3.704	0.024	2061	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
56	3.792	0.023	2062	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
57	3.883	0.021	2063	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
58	3.977	0.020	2064	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
59	4.072	0.018	2065	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
60	4.170	0.017	2066	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
61	4.270	0.016	2067	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
62	4.372	0.015	2068	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
63	4.477	0.014	2069	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
64	4.585	0.013	2070	\$7,982,665	\$38,376,285	\$441,300	\$0	\$0	\$0	\$0	\$0	\$0	
65	4.695	0.012	2071	\$0	\$0	\$0	\$820,813	\$3,853,535	\$47,415	\$0	\$0	\$0	
66	4.807	0.011	2072	\$0	\$0	\$0	\$820,813	\$3,946,020	\$45,376	\$0	\$0	\$0	
67	4.923	0.011	2073	\$0	\$0	\$0	\$820,813	\$4,040,724	\$43,426	\$0	\$0	\$0	
68	5.041	0.010	2074	\$0	\$0	\$0	\$820,813	\$4,137,702	\$41,559	\$0	\$0	\$0	
69	5.162	0.009	2075	\$0	\$0	\$0	\$820,813	\$4,237,006	\$39,772	\$0	\$0	\$0	
70	5.286	0.009	2076	\$0	\$0	\$0	\$820,813	\$4,338,695	\$38,062	\$0	\$0	\$0	
71	5.413	0.008	2077	\$0	\$0	\$0	\$820,813	\$4,442,823	\$36,426	\$0	\$0	\$0	
72	5.543	0.008	2078	\$0	\$0	\$0	\$820,813	\$4,549,451	\$34,860	\$0	\$0	\$0	
73	5.676	0.007	2079	\$0	\$0	\$0	\$820,813	\$4,658,638	\$33,361	\$0	\$0	\$0	
74	5.812	0.007	2080	\$0	\$0	\$0	\$820,813	\$4,770,445	\$31,927	\$0	\$0	\$0	
75	5.951	0.006	2081	\$0	\$0	\$0	\$820,813	\$4,884,936	\$30,555	\$0	\$0	\$0	
76	6.094	0.006	2082	\$0	\$0	\$0	\$820,813	\$5,002,174	\$29,241	\$0	\$0	\$0	
77	6.240	0.005	2083	\$0	\$0	\$0	\$820,813	\$5,122,226	\$27,984	\$0	\$0	\$0	
78	6.390	0.005	2084	\$0	\$0	\$0	\$820,813	\$5,245,160	\$26,781	\$0	\$0	\$0	
79	6.544	0.005	2085	\$0	\$0	\$0	\$820,813	\$5,371,044	\$25,630	\$0	\$0	\$0	
80	6.701	0.004	2086	\$0	\$0	\$0	\$820,813	\$5,499,949	\$24,528	\$0	\$0	\$0	
81	6.861	0.004	2087	\$0	\$0	\$0	\$820,813	\$5,631,948	\$23,473	\$0	\$0	\$0	

Discount Rate 0.070	PROJECT:	OU 3-14 Tank Farm	ALTERNATIVE:	#5 Contingent SRPA Pump & Treat for Cleanup

					CAPITAL COST		ANNUAL OPERAT	ION AND MAINTEN	ANCE (O&M) COST	PERIODIC COST			
Year	Escalation Rate	Discount Rate	Year	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	
82	7.026	0.004	2088	\$0	\$0	\$0	\$820,813	\$5,767,114	\$22,464	\$0	\$0	\$0	
83	7.195	0.004	2089	\$0	\$0	\$0	\$820,813	\$5,905,525	\$21,498	\$0	\$0	\$0	
84	7.367	0.003	2090	\$0	\$0	\$0	\$820,813	\$6,047,258	\$20,574	\$0	\$0	\$0	
85	7.544	0.003	2091	\$0	\$0	\$0	\$820,813	\$6,192,392	\$19,690	\$0	\$0	\$0	
86	7.725	0.003	2092	\$0	\$0	\$0	\$820,813	\$6,341,009	\$18,843	\$0	\$0	\$0	
87	7.911	0.003	2093	\$0	\$0	\$0	\$820,813	\$6,493,193	\$18,033	\$0	\$0	\$0	
88	8.101	0.003	2094	\$0	\$0	\$0	\$820,813	\$6,649,030	\$17,258	\$0	\$0	\$0	
89	8.295	0.002	2095	\$0	\$0	\$0	\$820,813	\$6,808,607	\$16,516	\$0	\$0	\$0	
90	8.494	0.002	2096	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
91	8.698	0.002	2097	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
92	8.907	0.002	2098	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
93	9.120	0.002	2099	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
94	9.339	0.002	2100	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
95	9.563	0.002	2101	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
96	9.793	0.002	2102	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
97	10.028	0.001	2103	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
98	10.269	0.001	2104	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
99	10.515	0.001	2105	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
100	10.767	0.001	2106	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
101	11.026	0.001	2107		\$0	\$0			\$0			\$0	
102	11.291	0.001	2108										
103	11.561	0.001	2109										
104	11.839	0.001	2110										
105	12.123	0.001	2111										
106	12.414	0.001	2112										
107	12.712	0.001	2113										
108	13.017	0.001	2114										
109	13.329	0.001	2115										

Discount Rate 0.070	PROJECT:	OU 3-14 Tank Farm	ALTERNATIVE:	#5 Contingent SRPA Pump & Treat for Cleanup
			LIFE CYCLE	COST ANALYSIS

				CAPITAL COST			ANNUAL OPERATION AND MAINTENANCE (O&M) COST			PERIODIC COST		
Year	Escalation Rate	Discount Rate	Year	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%	Current 2006 Dollars	Escalated Dollars	Net Present Value @ 7%
110	13.649	0.001	2116									
111	13.977	0.001	2117									
112	14.312	0.001	2118									
113	14.656	0.000	2119									
114	15.008	0.000	2120									
115	15.368	0.000	2121									
116	15.737	0.000	2122									
117	16.114	0.000	2123									
118	16.501	0.000	SUBTOTALS	\$7,982,665	\$38,376,285	\$441,300	\$20,520,325	\$129,936,604	\$735,251	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>
119	16.897	0.000	TOTALS	28,502,990	168,312,890	1,176,551						

Escalation rates were taken from "http://oecm.energy.gov/Portals/2/2004Rates.pdf," Office of Engineering and Construction Management, US Department of Energy (DOE).

Discount rates were taken from "A Guide to Developing and Documenting Cost Estimates During the Feasibility Study," US Army Corps of Engineers (USACE)/US Environmental Protection Agency (EPA).

These numbers do not include contingency. For contingency, see "Summary Cost Estimate Sheet"